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I.—*Materials for a Flora of the Malayan Peninsula.*—By SIR GEORGE KING, K.C.I.E., M.B., LL.D., F.R.S., &c., late Superintendent of the Royal Botanic Garden, Calcutta.

No. 11.

After about two years of unavoidable delay, I am now able to offer to the Society a further contribution towards the completion of these *Materials*. The paper now submitted gives an account of the natural order which, in the sequence hitherto followed, falls to be numbered XLVII. An account of the family *Myrtaceæ* which ought, according to that sequence, to have immediately preceded this one of *Melastomaceæ* is now in preparation, and will I hope before long be ready for presentation to the Society. The present paper is not entirely my own work, the account of the genus *Sonerila* having been most kindly prepared for me by Dr. O. Stapf, First Assistant in the Royal Herbarium, Kew, whose contributions to the Botany of Borneo, published by the Linnean Society of London, have already marked him as an authority on the Malayan Flora.

Order XLVII. MELASTOMACEÆ.

Herbs or shrubs, more rarely trees or climbers. *Leaves* opposite or rarely whorled, generally petioled, entire or nearly so, often palmately 3-5-7-nerved from near the base to the apex (mostly pinnate-veined in *Mecycylon*); stipules 0. *Flowers* spiked, paniced or cymose,

rarely solitary or fascicled, regular, hermaphrodite. *Calyx-tube* united by vertical walls to the ovary, rarely nearly free; limb usually 4-5- (sometimes 3- or 6-)lobed, or truncate, rarely falling off in a cap. *Petals* as many as the calyx-lobes, contorted in bud, inserted on the margin of the calyx-limb. *Stamens* as many as or more than (frequently twice as many as) the petals, inserted with them; alternate stamens often shorter, sometimes rudimentary, filaments bent inwards in the bud; anthers opening at the summit by one or two pores, rarely by slits down the face; connective often appendaged near the base by bristles, tubercles or a spur. *Ovary* 4-5- (rarely 3- or 6-)celled (in *Memecylon* 1-celled); style simple, filiform, rarely short; ovules very many (except in *Memecylon*); placentas axile, parietal or free central. *Fruit* included in the calyx-tube, capsular or berried, breaking up irregularly or by slits through the top of its cells. *Seeds* minute, very many (in *Memecylon* one only); albumen 0; cotyledons short (or in some of the *Memecyleæ* long, thin and convolute).—DISTRIB. Species about 2700, tropical, with a few subtropical; mostly in America, but many in south-east Asia, and a few in Africa and Polynesia.

SUBORDER I. MELASTOMEÆ. *Ovary* 3-6-celled. *Ovules* very many, on placentas radiating from the axis. *Seeds* very many. *Anthers* opening by a single terminal pore (rarely by 2).

Tribe I. OSBECKIÆ. *Seeds* curved through half a circle, minutely punctate.

Stamens all nearly alike. Fruit a berry ... 1. OTANTHERA.

Stamens very unequal ... 2. MELASTOMA.

Tribe II. OXYSPORÆ. *Seeds* straight, oblong or cuneate, raphe often excurrent. *Ovary* with the vertex usually free, conical. *Petals* more than 3. *Inflorescence* not scorpioid. *Fruit* capsular.

* *Inflorescence* terminal (see also *Ochthocharis*).

Panicles broad, often coloured ... 3. OXYSPORA.

Panicles narrow. Flowers minute ... 4. ALLOMORPHIA.

** *Inflorescence* axillary, *stamens* equal, *flowers* minute.

Stamens 4 ... 5. BLASTUS.

Stamens 10 ... 6. OCHTHOCHARIS.

Stamens 8 ... 7. ANERINCLEISTUS.

Tribe III. SONERILEÆ. *Seeds* straight, oblong or cuneate, often angular, raphe sometimes excurrent. *Ovary* flattened or depressed at the vertex. *Fruit* capsular.

Petals 3. *Inflorescence* scorpioid ... 8. SONERILA.

Petals 4. Flowers in a long-peduncled head ... 9. PHYLLAGATHIS.

Tribe IV. MEDINILLEÆ. *Seeds* straight, cuneate or obovate, often angular. *Connective* often appendaged near the base. *Fruit* baccate.

* *Longer stamens* having two long bristles attached to the base of the connective in front.

Cymes lateral ... 10. MARUMIA.

Panicles terminal ... 11. DISSOCHÆTA.

** Longer stamens having the connective at base variously appendaged but not with two long bristles in front (equal and with two short bristles in one species.)

Four vertical plates on the ovary 12. ANPLECTRUM.

*** Stamens equal or nearly so.

Connective not at all or very shortly produced at the base, but having 2 tubercles in front and a spur behind ... 13. MEDINILLA.

Anthers not produced at the base; connective with tufted beard at the base behind but not spurred ... 14. POGONANTHERA.

Connective not produced at the base and with no appendages in front, but minutely spurred behind, not bearded 15. PACHYCENTRIA.

SUBORDER II. ASTRONIEÆ. *Ovary* 4-5-celled; ovules very many on parietal nearly basal placentas. *Seeds* very many. *Anthers* short, opening by slits. *Fruit* baccate.

Calyx-tube smooth. Panicles terminal 16. ASTRONIA.

Calyx-tube verrucose. Cymes small 17. PTERNANDRA.

SUBORDER III. MEMECYLEÆ. *Ovary* 1-celled; ovules about 9 on a basal short free-central placenta. *Stamens* equal; anthers short, opening by pores or short slits. *Berry* 1-seeded.—*Leaves* usually pinnate-nerved.

Stamens 8 18. MEMECYLON.

1. OTANTHERA, Blume.

Slender shrubs. *Leaves* membranous, entire, 3-5-nerved. *Panicles* terminal or sub-terminal, lax, cymose, few-flowered. *Calyx* bearing on its ovoid tube simple or tufted bristles, rarely glabrous, the lobes 5 or 6, equal to or shorter than the tube, deciduous. *Petals* 5-6, obovate, the apex rounded or acute. *Stamens* subequal, 10-12; anthers opening by a terminal pore, not beaked, the connective not produced at the base, or slightly biauriculate in front. *Ovary* half-inferior, with 5 or 6 bristles at its apex, 5-6-celled; style filiform, simple; ovules numerous on axile placentas. *Fruit* 5-6-celled, baccate. *Seeds* small, curved, punctate. **DISTRIB.** Species 7 or 8; Malaya, Burma, Philippines, N. Australia.

Calyx-tube bearing simple bristles 1. *O. celebica*.

Calyx-tube quite glabrous 2. *O. nicobarensis*.

1. OTANTHERA CELEBICA, Blume, Mus. Bot. Lugd. Bat. I, 56. *Leaves* narrowly elliptic, shortly acuminate: upper surface sparsely strigose, the nerves glabrous, lower usually glabrous, the main nerves (and sometimes the minor also) with sub-adpressed bristles: length 2.25-3.5 in., breadth .5-1.5 in., petioles .2-.4 in. long. *Calyx-tube* with simple acuminate bristles often bulbous at the base, the teeth setose. **Naud., Ann. Sc. Nat. Ser. 3, XIII, 353; Cogn. in DC. Mon. Phan. VII, 342.**

ANDAMAN ISLANDS; common, *King's Collectors*. DISTRIB. Celebes.

2. OTANTHERA NICOBARENSIS, Teyism. et Binn. Pl. Nov. Hort. Bogor.
29. *Leaves* lanceolate or oblong-ovate, acuminate, upper surface sparsely strigose, the nerves glabrous; lower glabrous except the strigose nerves; length 3 to 4·5 in., breadth 1·25 to 2 in., petioles ·5 to 1 in. *Calyx-tube* quite glabrous; the teeth sub-ciliate. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 522; Kurz, Journ. As. Soc. Bengal, 1876, pt. II, 131; Cogn. in DC. Mon. Phan. VII, 342.

NICOBAR ISLANDS; *Novara Expedition*.

This has been collected only by the botanists of the Austrian expedition. It is the only species of the genus with a glabrous calyx.

2. MELASTOMA, LINN.

Scaly, strigose or villous shrubs. *Leaves* petioled, oblong or lanceolate, entire, 3-7-nerved. *Flowers* terminal, solitary, clustered or paniced, rose or purple, 5- (rarely 6-7-) merous. *Calyx-tube* ovoid or campanulate, with simple (rarely with penicillate) hairs, lobes deciduous. *Petals* equal in number to the calyx-lobes. *Stamens* twice as many as the petals, very unequal, alternate longer ones with purple anthers having the connective long-produced at the base and terminating in two lobes, the shorter ones having yellow anthers, the connective not produced but with two tubercles in front. *Ovary* ovoid, more or less united to the calyx-tube, 5- (rarely 6-7-) celled, apex bearing bristles; style filiform, simple; ovules very numerous, placentas axile. *Fruit* berried, succulent or coriaceous, enveloped in the calyx-tube, bursting irregularly. *Seeds* minute, very many, curved through half a circle, minutely punctate.—
DISTRIB. Species 40; Asia, North Australia and Polynesia.

Calyx-tube densely covered with long, flexuose, spreading, shining, coloured bristly hairs ·25 to ·5 in. long; young branches, petioles, and pedicels with stiff spreading bristles; flowers 2 to 3 in. in diam. ... 1. *M. decemfidum*.

Calyx-tube, young branches, petioles and pedicels with adpressed, lanceolate acuminate, serrulate scales: cymes condensed, flowers 1·25 in. across ... 2. *M. imbricatum*.

Calyx-tube densely clothed with linear acuminate, entire or serrate scales, those of the young branches, petioles and pedicels shorter and broader; corymbs with deciduous (often large) bracts; flowers 2 to 3 in. across (only 1·25 in. var. *perakensis*) ... 3. *M. malabathricum*.

1. MELASTOMA DECEMFIDUM, Roxb. Hort. Beng. 90; Fl. Ind. II, 406. A shrub, 5 to 10 feet high; young branches at the nodes and near the tips, petioles and pedicels with numerous stiff, spreading bristles. *Leaves* narrowly-lanceolate or oblong-lanceolate, acuminate, 3- to 5-nerved; the upper surface smooth except for a few scattered

adpressed hairs, the lower glabrous, glandular-punctate; length 2·5 to 5 in., breadth ·6 to 1·8 in.; petiole ·25 to ·5 in. long. *Flowers* solitary or two or three together, bright purple, 2 to 3 in. in diam., the bracts few, short, acuminate; pedicels under ·5 in. *Calyx-tube* densely covered with long, flexuose, shining, coloured, bristly hairs; ·25 to ·5 in. long, the teeth rather shorter than the tube, ovate-lanceolate, acuminate, glabrous inside, deciduous. *Fruit* ·75 in. in diam., truncate at the apex, ovoid to ovoid-globular, ·5 in. in diam. Jack in Trans. Linn. Soc. XIV, (1822) 6; DC. Prodr. III, 146; Naud., Ann. Sc. Nat. Ser. 3, XIII, 282; Bl. Mus. Bot. I, 55; Cogn. in DC. Mon. Phan. VII, 345. *M. sanguineum*, Sims in Bot. Mag. t. 2241; DC. Prodr. III, 145; Don in Mem. Wern. Soc. IV, 289; Miq. Fl. Ind. Bat. I, pt. I, 504; Naud. l.c. 281; Triana in Trans. Linn. Soc. 60; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 524; Hemsl. in Jour. Linn. Soc. XXIII, 300. *M. malabathrica*, Sims in Bot. Mag. (not of Linn.) 529. *M. Gaudichaudianum*, Naud. l.c. 278. *M. macrocarpum*, Naud. l.c. 281 (not of Don). *M. porphyreum*, Bipp. et Bl. in Flora 1831, II, 487. *M. pedicellatum*, Naud. l.c. 280; Cogn. in DC. Mon. Phan. VII, 346.

PENANG; Wallich 4042! King, Curtis 683. MALACCA; Griffith (K.D.) 2245/1! Maingay 773, 774! Ridley 3228. PAHANG; Ridley 2667. KEDAH; Ridley 5211. PERAK; Scortechini 2123! King's Collector 1540, 1853, 8754. DISTRIB. Burma, China, Hongkong, Tonkin.

VAR. *mollis*, Clarke in Hook. fil. Fl. Br. Ind. II, 524. Young branches very hispid throughout their whole length; leaves with numerous subadpressed and spreading stiff hairs on both surfaces, especially on the nerves. Vidal Syn. Pl. Filip. t. 51; fig. D. *M. molle*, Wall. Cat. 4046; Triana in Linn. Trans. XXVIII, 60; Cogn. in DC. Mon. Phan. VII, 346. *M. crinitum*, Naud. l.c. 524. *M. malabathricum* Blanco, Fl. Filip. Ed. III, tab. 152 (not of Linn.).

SINGAPORE; Wallich. DISTRIB. Luzon; Cuming 853.

2. MELASTOMA IMBRICATUM, Wall. Cat. 4047. A spreading shrub, 5 to 15 feet high; young branches (especially at the nodes and tips), petioles, pedicels and calyx covered with adpressed, lanceolate acuminate, serrulate scales. *Leaves* elliptic-oblong to ovate-oblong, rather abruptly narrowed at the base, the apex acute or acuminate; main nerves 5 (the two lateral slender); both surfaces strigose, the main nerves on the lower with adpressed scales; length 3·5 to 8·5 in., breadth 1·5 to 4·5 in., petiole ·35 to 1·35 in. *Cymes* solitary, terminal, condensed, 1·5 to 2 in. in diam., enclosed in bud by deciduous, lanceolate bracts and bracteoles. *Flowers* 7 to 15, 1·25 in. in diam.; the pedicels ·15 in. long. *Calyx-tube* urceolate, the teeth shorter than the tube, lanceolate-acuminate, deciduous. *Petals* oblong. *Anthers* short. *Fruit* ovoid-globose or sub-globose, truncate and shortly toothed at the mouth,

pulpy, .8 in. in diam. when ripe. Triana in Trans. Linn. Soc. XXVIII, 60; C. B. Clarke in Hook. fl. Fl. Br. Ind. II, 524; Cogn. in DC. Mon. Phan. VII, 355. *M. obovatum* var. *oblongum*, Bl. ex Triana l.c. 60.

PERAK; *Scortechini* 162! *King's Collector* 444, 6023, 8696, 10946! *Wray* 2980. PENANG; *Wallich, Courtis*. DISTRIB. Sumatra, *Forbes* 2072! Brit. India (Khasia and Assam); Tonquin.

Easily recognised by its condensed cymes and rather small flowers.

3. MELASTOMA MALABATHRICUM, Linn. Sp. Pl. 559. A spreading shrub, 3 to 6 feet high; young branches, petioles and pedicels densely clothed with rather short, acute to acuminate, often serrulate scales. *Leaves* ovate-lanceolate, ovate-oblong or elliptic, the apex acute or shortly acuminate, petioles short, 3- to 5-nerved (the marginal pair when present slender); both surfaces strigose, the hairs sparser on the upper and pale; on the lower the hairs more numerous (especially on the minor nerves) and darker, the main nerves clothed with broad-based acuminate scales: length 2 to 5.5 in., breadth .75 to 2.5 in.; petioles .2 to .5 in. long. *Corymbs* terminal, few-flowered, enveloped in bud by large, deciduous, ovate-cordate bracts; *flowers* 2 to 3 in. across, the pedicels .2 to .4 in. long. *Calyx*; the tube cylindric-campanulate, densely clothed externally with linear acuminate, entire or serrate, pale scales, almost glabrous within; the teeth shorter than the tube (rarely equal to it), acute or abruptly acuminate, the apex deciduous, scaly only near the midribs. *Flowers* 2 to 3 in. across. *Petals* purple. *Fruit* subglobular, truncate, pulpy, .25 in. in diam. when dry. DC. Prodr. III, 145; Roxb. Hort. Beng. 33; Fl. Ind. II, 405; Wall. Cat. 4040; Bl. Bijdr. 1076; Bot. Reg. t. 672; W. and A. Prodr. 324; Wight III. t. 95; Dalz. and Gibs., Bomb. Fl. 92; Naud. in Ann. Sc. Nat. Ser. 3, XIII, 285; Thwaites Enum. 106 (α and β); Benth. Fl. Aust. III, 293; C. B. Clarke in Hook. fl. Fl. Br. Ind. II, 523; Kurz, For. Fl. I, 503, not of Miq. Fl. Ind. Bat. I, pt. I, 507; Naud. in Ann. Sc. Nat. Ser. 3, XIII, 273; Cogn. in DC. Mon. Phan. VII, 349. *M. affine*, D. Don in Mem. Wern. Soc. IV, 288; DC. Prodr. III, 145. *M. obvolutum*, Jack in Trans. Linn. Soc. XIV, 3; Cogn. in DC. Mon. Phan. VII, 348. *M. articulatum*, *M. heterostegium*, *M. novæ-hollandiæ* and *M. sechellarum*, Naud. in Ann. Sc. Nat. Ser. 3, XIII, 285, 286 and 290. *M. velutinum*, Seem. Fl. Vit. 90. *M. Banksii*, Cunn. ex Triana. *Trembleya rhinantha*, Griff. Not. IV, 677.

In all the provinces. DISTRIB. British India and Malayan Archipelago, W. China, Seychelle Islands, N. Caledonia, N. Australia.

A widely distributed species varying in reality very little in localities widely separated. The differences have however been taken as the bases of many bad and doubtful species. In his *Flora Australiensis*, Mr. Bentham remarks (and apparently with justice) that the whole twenty-four species described by Naudin in Ann. Sc.

Nat. Ser. 3, XIII, pp. 283 to 293; should be reduced here. It is not without reluctance that I give four varieties as follows:—

VAR. 1. *polyantha*, Benth. Fl. Aust. III, 292. Bracts of inflorescence small and very early deciduous or altogether absent; teeth of calyx usually short; leaves not exceeding 2.5 in. in length. *M. polyanthum*, Blume in Flora for 1831, 480; Mus. Bot. I, 52, t. 6; Naudin in Ann. Sc. Nat. Ser. 3, XIII, 287; Miq. Fl. Ind. Bat. I, pt. I, 502; Triana in Linn. Trans. XXVII, 59; C. B. Clarke in Hook. fil. Fl. Br. Ind. III, 523. *M. brachyodon*, Naud. l.c. 292; Miq. Fl. Ind. Bat. I, 570, t. 8, fig. A. *M. malabathricum*, Desr. in Lam. Encyc. Bot. IV, 36; Ill. Gen. tab. 361, f. 1; Jack in Linn. Trans. XIV, 4, fig. 1, a to g; Poir. Dict. IV, 37; Bl. Bijdr. 1070. *M. erecta*, Jack l.c. 5; DC. Prodr. III, 145. *M. tidorensis*, Bl. in Flora 1831, p. 482, Miq. l.c. 514. *M. Royenii*, Bl. l.c. 483. *M. tondanense*, Bl. Mus. Bot. I, 54. *M. Hombronianum*, *M. oliganthum* and *M. microphyllum*, Naud. l.c. 278, 292 and 293.

ANDAMANS; *King's Collector*. SINGAPORE; *Anderson, King*. MALACCA; *King*. PENANG; *Curtis, King*. DISTRICTS. Burma, N. China, Sumatra, Java and other islands in the Malay Archipelago, Luzon, N. Australia.

VAR. 2. *adpressa*, C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 523. Leaves narrowly oblong-lanceolate, smaller than in the typical plant and with harsher pubescence. *M. adpressum*, Benth. in Wall. Cat. 4081, Naud. l.c. XIII, 27; Cogn. in DC. Mon. Phan. VII, 349. *M. anophanthum*, Naud. l.c. 277.

MALACCA; *Maingay* 771 to 773 in Herb., Kew. PENANG; *Wallich, King, Curtis*. PROVINCE WELLESLEY; *Curtis*.

This is scarcely worthy of separation as a variety. It is slightly smaller and more strigose than the type and differs from VAR. *polyanthum*, so far as I can see, only by the large size of the bracts of the inflorescence.

VAR. 3. *normalis*, King. Hairs of both surfaces very numerous, those of the upper sub-adpressed, of the lower sub-spreading, softer (almost silky); calyx-teeth long, adpressed hairy within. *M. normale*, Don Prodr. Fl. Nep. 220; DC. Prodr. III, 145; Naud. in Ann. Sc. Nat. Ser. 3, XIII, 289; Kurz, For. Flora I, 504; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 524; Triana in DC. Mon. Phan. VIII, 352. *M. Wallichii*, DC. l.c. 146. *M. napalense*, Lodd. Bot. Cab. t. 707. *M. pelagicum*, Naud. l.c. 279. *M. longifolium*, Naud. l.c. 293.

In most of the provinces.

VAR. 4. *perakensis*, King. Leaves more or less broadly elliptic, 5- to 7-nerved, the upper surfaces strigose (sometimes nearly glabrous in old specimens), the lower softly and rather densely pubescent; branches, petioles and pedicels with long, spreading, rather soft hairs; calyx-tube densely clothed with long, flexuose, soft, often ciliate setae,

the lobes large, adpressed strigose on both surfaces: flowers occasionally only 1.25 in. in diam.

PERAK; *Ridley* 2935! *Curtis* 1298! *Wray* 1733, 1883! *King's Collector* 2173, 2091, 8463! *Scortechini* 780. SINGAPORE; *Hullet* 5728. SELANGORE; *Ridley* 1996. DISTRIB. Java; *Forbes* 1142a.

This has broader leaves more softly hairy than *VAR. normalis*. The bristles of the calyx are much longer than in any other form of *M. malabathricum* and approach in number, length and density those of *M. sanguineum*, Don. A form of this from Perak, with the calyx-hairs shorter than the type, connects it with *M. imbricatum*, Wall.

3. OXYSPORA, DC.

Large spreading shrubs with drooping branches terminated by large, lax, almost naked panicles of rose-purple flowers. *Leaves* opposite, long-petioled, large, 5- to 7-nerved, ovate, acuminate. *Panicle* long, lax, sometimes narrow, the branches decussate, the flowers on the branchlets not glomerulate, bracts very small. *Calyx-tube* ovate, cylindric or funnel-shaped, its teeth 4, short, triangular. *Stamens* 8, four large with elongated anthers and four small, or all equal, opening by a single apical pore; the base produced and bilobed, the connective with or without an appendage. *Ovary* inferior, 4-celled, its apex glabrous; style simple, elongate; ovules numerous; the placentas axile, radiating. *Capsule* dry, elongate, double fusiform, with 8 ribs. *Seeds* numerous, falcate; the raphe lateral, produced at the apex into a point in front. DISTRIB. Seven species, Indian and Malayan.

Anthers dissimilar; petioles not winged	...	...	1.	<i>O. stellulata</i> .
Anthers similar:—				
Petioles not winged	...	...	2.	<i>O. acutangula</i> .
„ winged	...	...	3.	<i>O. Curtisii</i> .

NOTE.

The genera *Allomorpha* and *Oxyspora* were so difficult of separation even before the discovery of the new species herein described (*viz.*, *A. alata*, Scort., *O. acutangula* and *O. Curtisii*) that Baillon (*Hist. des Plantes* VII, 43) united them. In Baillon's time *Oxyspora* was distinguished mainly by having four of its eight stamens much larger than and differently coloured from the other four. The three older species (all British Indian) *O. paniculata*, *O. vagans*, and *O. cernua* and the new Malayan one *O. stellulata* have this character, which would form an excellent head-mark for the genus if it did not break down. The character, however, does break down, for in the two Malayan plants here published as *O. acutangula* and *O. Curtisii* the eight anthers are all equal, although in all other respects these plants have the facies of the older species of *Oxyspora*. I have referred these to *Oxyspora* as preferable to the alternative course of putting them into *Allomorpha*, and I have therefore, in order to admit them, modified the generic character of *Oxyspora* as regards anthers. *Oxyspora*, as here defined, thus depends for its separation as a genus on its open paniculate inflorescence and long double fusiform boldly-ridged capsules, while *Allomorpha* is characterised by shortly-branched panicles, on the ultimate branchlets

of which the flowers are clustered in pseudo-glomeruli, while the capsules are not much longer than broad and are often urn-shaped.

1. *OXYSPORA STELLULATA*, King, n. sp. A shrub, 15 to 20 feet high; young branches, petioles, inflorescence and calyx-tube covered with pale, minute, stellate-hairy scales. *Leaves* somewhat unequal, ovate, slightly cordate at the rounded base, the apex shortly apiculate, 7-nerved (the middle nerve very strong); both surfaces free from hairs, but (especially the upper) with numerous minute hairy scales most numerous on the nerves, the transverse veins on the lower very distinct and straight; length 5 to 9 in.; breadth 2.25 to 4.5 in.; petiole 1.25 to 4 in. *Panicle* solitary, terminal, longer than the leaves; the branches in pairs, divaricate; flowers in umbels of 4 to 6 on the ultimate branchlets. *Calyx-tube* funnel-shaped, sub-tetragonous, the mouth with four small triangular teeth, narrowed at the base into the short pedicel. *Petals* 4, orbicular-ovate, blunt, glabrous. *Stamens* 8, very unequal, four linear, purple and twice as long as the other 4 short, yellow. *Disc* of 4 incurved plates. *Ovary* 4-winged. *Capsule* clavate, opening by 4 broad truncate valves; seeds minute, shortly beaked.

PERAK; *Scortechini* 249 in part! *King's Collector* 418, 2851! *Wray* 1224. DISTRICT. Sumatra, *Forbes* 3034.

2. *OXYSPORA ACUTANGULA*, King, n. sp. A bush; young branches boldly 4-angled, glabrous. *Leaves* elliptic-oblong, somewhat narrowed to the rounded base, the apex acute, 5-nerved; upper surface glabrous, the lower minutely lepidote-pubescent on the nerves and veins; length 4 to 6 in., breadth 1.75 to 2.5 in., petiole .6 to .75 in., minutely lepidote. *Panicle* solitary, terminal, usually somewhat shorter than the leaves, broadly pyramidal, lepidote-puberulous, many-flowered. *Flowers* (including the stamens) .5 in. long. *Calyx-tube* funnel-shaped, minutely rufous-stellate lepidote, the mouth with 4 small triangular teeth. *Petals* 4, glabrous, broadly ovate, blunt. *Stamens* 7 or 8, equal, lanceolate, acuminate, slightly curved, the lobes at the base short, rounded, appendages none, but a grooved, narrow process on the back of the connective in the lower half. *Capsule* ovoid, narrowed to the equally long pedicel, 8-ridged, glabrous, the mouth with an everted rim, .25 in. long.

PERAK; *Wray* 329.

3. *OXYSPORA CURTISII*, King. A shrub; branchlets bluntly 4-angled not winged, puberulous. *Leaves* ovate-acuminate, the base rounded, not passing into the petiole, 7-nerved, upper surface sparsely strigose, minutely lepidote, the lower glabrous, the edges glandular-serrulate; length 5 to 7 in., breadth 3 to 4 in., petioles 1.5 to 2.5, broadly winged, the wing much expanded at the base and joining that of the opposite leaf. *Panicle* solitary, terminal, spreading, longer than the leaves, with

numerous 4-angled branches, bracteate, everywhere minutely lepidote; the larger branches bearing a pair of very unequal bracts near the base exactly like the stem-leaves but smaller. *Flowers* on slender pedicels as long as the calyx-tube. *Calyx-tube* cylindric, 8-ribbed, tapering to base and apex; the mouth expanded and truncate but with 4 minute teeth. *Petals* 4, as long as the scaberulous filaments. *Stamens* 8, much exerted; the anthers longer than the filaments and longer than the calyx-tube, linear, acuminate, very slightly lobed at the base and inappendiculate. *Capsules* fusiform, .2 in. long, much expanded at the mouth.

PERAK; *Curtis* 1300.

The only specimen of this which I have seen is in Mr. Curtis's Herbarium.

The species resembles *Allomorpha alata*, Scort. in its eight equal stamens, in the shape of its leaves and in its winged petioles; but differs in its more elongated capsules (which are fusiform instead of globose), in its larger laxer panicles and in its conspicuously bristle-serrate leaves. The two species just described form very marked connecting links between the genera *Allomorpha* and *Oryzopora*.

4. ALLOMORPHIA, Blume.

Shrubs, tall or short. *Leaves* opposite, long-petioled, large, lanceolate, ovate or orbicular, nerved, glabrous or nearly so. *Panicles* terminal, compound, with small flowers in clustered whorls. *Calyx-tube* funnel-shaped or campanulate, limb of 3 or 4 very short lobes. *Petals* 3 or 4, rose or white, small. *Stamens* 6 or 8, nearly equal; anthers attenuated at the top with one pore, cells long-produced and diverging at their bases; connective without appendage. *Ovary* 3- (rarely 4-) celled, enclosed by but nearly free from the calyx-tube; style filiform, simple; ovules very many, placentas axile, 2-fid. *Capsule* small, dry, not much longer than broad, usually urn-shaped, ribbed, opening at the top by 3-4 valves. *Seeds* very many, narrowly obtrapezoidal. **DISTRIB.** Species 5: whereof 4 are from the Malay Peninsula and its attached islands; 1 from Canton.

Petioles not winged:—

- | | | | | | |
|---|-----|-----|-----|----|--------------------|
| Calyx-tube with 3 or 4 teeth; stamens unequal; anthers sagittate at base; capsule ribbed | ... | ... | ... | 1. | <i>A. exigua</i> . |
| Calyx-tube without teeth; stamens equal; anthers only slightly lobed at the base; capsules not ribbed | ... | ... | ... | 2. | <i>A. Wrayi</i> . |

Petioles winged:—

- | | | | |
|--|-----|----|-------------------|
| Branches of the panicle winged; capsule sub-globular | ... | 3. | <i>A. alata</i> . |
|--|-----|----|-------------------|

1. ALLOMORPHIA EXIGUA, Blume in *Flora* 1831, II, 523. A shrub, 2 to 10 feet high; branches slender, subangular, puberulous or glabrous. *Leaves* elliptic-ovate to ovate-lanceolate, acuminate, those of the same pair often unequal in size; the base rounded or narrowed, not cordate;

upper surface very sparsely strigose (glabrous in old leaves); the lower glabrous, pale, the transverse nerves prominent; length 4.5 to 11 in.; breadth 1.5 to 5 in.; petiole .75 to 4 in. *Panicle* usually solitary, terminal, often longer than the leaves, lax, minutely rusty-pubescent; bracts lanceolate or oblong, deciduous; the *flowers* .1 in. long, shortly pedicellate, in stalked umbels on the ultimate branchlets or in subsessile fascicles. *Calyx* rusty-puberulous, with 3 or 4 short broad teeth. *Stamens* 6 or 8, alternately long and short, sagittate at the base and with a small linear appendage behind. *Petals* 3 or 4, rosy. *Capsule* less than .1 in. long, boldly 6-ribbed. Naud. in Ann. Sc. Nat. Ser. 3, XV, 310; Triana in Trans. Linn. Soc. XXVIII, 74; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 527; Cogn. in DC. Mon. Phan. VII, 464. *Melastoma exigua*, Jack in Trans. Linn. Soc. XIV, 10, tab. 1, fig. 2; DC. Prod. III, 149. *M. impuber*, Roxb. Fl. Ind. II, 405; Wall. Cat. 4048.

MALACCA; *Griffith* 2263 & 4 (K.D.); *Maingay* 776 (K.D.); *Harvey*. PENANG; *Wallich* 4048; *Curtis* 399; *Griffith*; *King*. PERAK; *Scortechini* 227, 383; *Wray* 160; *King's Collector* 450, 2302, 3106. **DISTRIB.** Sumatra; *Forbes* 3062.

There is some variety in this plant as regards size and inflorescence. A slender form, which never exceeds 2 or 3 feet in height and which has smaller leaves than the type, seems worthy of separation as a variety. It appears to have been so recognised by Wallich who, in distributing his Herbarium, distinguished it by the letter *a*. A less distinctly marked form is one in which the flowers are grouped on the branches of the inflorescence in dense almost sessile fascicles.

VAR. minor, King. Leaves narrowly elliptic, tapering much to base and apex, 2 to 4.5 in. long; inflorescence slender, few-flowered, very lax; height only 2 to 3 feet.

PENANG; *Wallich*, Cat. 4048a; *Curtis* 73. PERAK; *Scortechini* 1702; *Wray* 161, 3414; *King's Collector* 2302.

2. **ALLOMORPHIA WRAYI**, King, n. sp. A shrub, 2 to 4 feet high; branches and petioles with flexuose, spreading, ferruginous hairs. *Leaves* 7-nerved, broadly ovate to rotund-ovate, the apex shortly and abruptly acuminate, the base narrowed, the edges obscurely and minutely bristle-toothed: upper surface very sparsely strigose or glabrous, often with minute, brown scales on the chief nerves; lower glabrous; length 5 to 9 in., breadth 3.5 to 5.5 in.; petiole 2.25 to 2.75 in. *Panicles* solitary, axillary, slightly longer than the petioles but much shorter than the leaves, glabrous or rusty puberulous towards the extremities: the branches short, spreading, rather condensed when young, few flowered. *Calyx-tube* widely campanulate, minutely rusty-puberulous or almost glabrous, without ribs; the mouth truncate, slightly waved but not toothed. *Petals* 4. *Stamens* 8, equal, the anthers lobed but not sagittate at the base, the back with a slight supra-basal appendage.

Capsule glabrous, sub-globular, slightly contracted below the sub-membranous truncate mouth, under .1 in. in diam.

PERAK ; *Wray* 2483 ; *King's Collector* 2061, 2380, 2773 ; *Scortechini* 50, 425. PENANG ; *Curtis* 2008.

A species allied to *A. exigua*, Bl. but with pubescent branches and petioles, shorter and more contracted panicles, a wider, toothless calyx-tube, sub-globular capsules and equal anthers only slightly lobed at the base. In Mr. *Wray's* field-note on his specimens he remarks that the flowers are white and the leaves dark shining green above and crimson beneath.

3. ALLOMORPHIA ALATA, *Scortechini* Mss. A glabrous shrub, 3 to 6 feet high ; the branchlets broadly winged. *Leaves* ovate or elliptic-ovate, the apex shortly acuminate ; the base narrowed into the broadly-winged petiole, 5-nerved ; both surfaces glabrous, the edges shortly bristle-toothed ; length 5 to 10 in., breadth 2.5 to 4.5 in., petiole .75 to 4 in. *Panicle* solitary, terminal, often nearly as long as the leaves, lax ; its branches diverging, 4-angled and 4-winged, very minutely rusty lepidote-puberulous. *Flowers* clustered in small umbels near the ends of the branches, the bases of the umbels sometimes with a ring of bracteoles and minute imperfect flowers. *Calyx-tube* cylindric-ovoid, the limb expanded and with 4 small, persistent teeth. *Petals* 4, twice as long as the calyx-teeth but shorter than the filaments. *Stamens* 8, equal, exserted, much longer than the calyx-tube. *Anthers* linear-acuminate, longer than the scaberulous filaments, very slightly lobed at the base and almost inappendiculate. *Capsules* sub-globular, 8-ribbed, glabrous, the mouth truncate, diam. .1 in.

PERAK ; *Scortechini* 236 ; *Wray* 1327 ; *Curtis* ; *King's Collector* 572, 2047.

The leaves of the same pair differ, often considerably, in size.

5. BLASTUS, Lour.

Shrubs. *Leaves* membranous, petiolate, ovate- or oblong-lanceolate, acuminate, entire or sinuate-serrate, 3- to 5-nerved. *Flowers* small 4-merous, ebracteolate. *Calyx-tube* oblong-campanulate or shortly oblong ; the limb not expanded, truncate, minutely 4-lobed. *Petals* 4, ovate, obtuse, glabrous, convolute into a cone before expansion. *Stamens* 4, equal, the filaments thin : anther incurved subulate, opening by a single apical pore ; basal lobes divaricate, the connective inappendiculate. *Ovary* adhering to the calyx, 4-celled ; style filiform ; stigma punctiform. *Capsule* obovoid or sub-globular, slightly 4-grooved ; dehiscing slowly by 4 valves. Seeds minute, numerous, irregularly recurved, reniform. **DISTRIB.** 3 species in Malaya, China, Cochin China and India.

BLASTUS COGNIAUXII, Stapf in Hook. Ic. Pl. t. 2311. A shrub, 6 to 10 feet high; young branches slender, as thick as a crow-quill, scaly, glabrous or puberulous. *Leaves* equal, oblong-lanceolate, narrowed at the base, the apex acuminate, 5-nerved (the marginal pair faint), the edges sub-entire; upper surface glabrous, with a few scattered, small glands; lower glandular-punctate, minutely fufuraceous on the nerves; length 4 to 7 in.; breadth 1 to 2.25 in., petiole .3 to .75 in. *Panicles* axillary or terminal, slender, much shorter than the leaves, glandular-scaly, the few divaricate branchlets bearing the flowers in dense terminal glomeruli of 6 to 9. *Calyx* shortly tubular, scaly, the teeth minute. *Anthers* narrowly ovate with many small yellow glands near the base. *Capsule* subglobular, truncate, .1 in. in diam., subglabrous; seeds linear. *Ochthocaris parviflora*, Cogn. in DC. Mon. Phan. VII, 421.

PERAK; common. DISTRIB. Borneo.

This is closely allied to *B. cochinchinensis*, Lour., but differs notably in its paniculate inflorescence.

6. OCHTHOCHARIS, Blume.

Small, erect, glabrous shrubs, branches round or obtusely 4-angled. *Leaves* opposite, petioled, oblong or lanceolate, 3-7-nerved, minutely denticulate-serrulate. *Flowers* minute, in axillary clustered cymes, rarely in axillary lax cymes or in lax terminal cymose panicles. *Calyx-tube* obovoid, smooth; teeth 5, small, persistent. *Petals* 5. *Stamens* 8 or 10, equal; anthers oblong, obtuse at the top, opening with one pore, at the base shortly produced or not; connective with or without an appendage. *Ovary* inferior, 4- or 5-celled, glabrous at the apex; style simple, filiform; ovules very many, placentas axile. *Capsule* globose, 5-valved, enclosed by the membranous calyx-tube. *Seeds* very many, irregularly club-shaped. DISTRIB. Species 5 or 6, extending from Singapore to Borneo.

Connective of anthers with no appendage at the base behind:—

Flowers in a terminal panicle, 5-merous	...	...	1. <i>O. paniculata</i> .
„ fascicles, 4-merous	...	...	2. <i>O. borneensis</i> .

Connective of anthers with an appendage at the base behind:—

Erect; flowers 5-merous; leaves 3-nerved	...	...	3. <i>O. javanica</i> .
Decumbent; flowers 4-merous; 5- to 7-nerved...	...	...	4. <i>O. decumbens</i> .

1. OCHTHOCHARIS PANICULATA, Korth. in Verh. Nat. Gesch. Bot. 247 t. 64. A small shrub with slender quadrangular branches, rusty pubescent towards the tips. *Leaves* membranous, elliptic-lanceolate, tapering to each end, the edges minutely bristle-serrate, 5- to 7-nerved (the marginal pair faint); upper surface glabrous; the lower somewhat pale,

scaly-puberulous on the nerves and prominent transverse veins; length 2·5 to 5 in., breadth 1·25 to 2 in., petiole ·35 to 8·5 in. *Panicle* cymose, terminal, spreading, less than half as long as the leaves; branches opposite, pedicels unequal, bracteolate at the base, not quite so long as the flowers. *Petals* 5, ovate-acuminate. *Stamens* 10, anthers oblong, blunt, not produced at the base and with the connective inappendiculate. *Capsule* depressed-globular, glabrous, with 5 shallow grooves, ·2 in. in diam. Blume Mus. Bot. I, 40; Naud. in Ann. Sc. Nat. ser. 3, XV, 307, with fig.; Miq. Fl. Ind. Bat. I, pt. I, 556; Triana in Trans. Linn. Soc. XXVIII, 74. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 528; Cogn. in DC. Mon. Phan. VII, 480. *Melastoma oxyphyllum*, Benth. in Wall. Cat. 4083.

SINGAPORE; Wallich. DISTRIB. Borneo.

2. OCHTHOCHARIS BORNEENSIS, Blume Mus. Bot. Lugd. Bat. I, 40. A shrub, 3 or 4 feet high. *Leaves* membranous, elliptic-lanceolate, 5-nerved (the lateral pair small), acuminate, the base cuneate, the edges minutely dentate, upper surface glabrous, the lower pale, minutely and furfuraceously stellate-hairy on the main and rather prominent transverse nerves; length 3 to 4·25 in.; breadth 1·25 to 1·75 in.; petioles sparsely stellate-hairy, unequal, ·3 to 1·8 in. long. *Flowers* in fascicles of 4 to 7, from tubercles on the stem below the leaves; the buds conical, ·1 in. long; pedicels slender, ebracteolate, ·25 to ·3 in. long. *Petals* 4, broadly ovate, narrowly acuminate. *Stamens* 8; the anthers oblong, blunt, neither produced nor appendiculate at the base. *Capsule* depressed-globular, glabrous, faintly 5-grooved, ·2 in. in diam. Naud. in Ann. Sc. Nat. Ser. 3, XV, 307; Cogn. in DC. Mon. Phan. VII, 480. *O. buruensis*, Teysm. and Binn. in Nat. Tijdschr. Ned. Ind. XXV, 426; Miq. in Ann. Bot. Lugd. Bat. I, 216.

SINGAPORE; Ridley 6221. DISTRIB. Borneo, Molluccas.

3. OCHTHOCHARIS JAVANICA, Blume in Flora 1831, 523. A shrub, 2 or 3 feet high. *Leaves* subcoriaceous, lanceolate or oblong-lanceolate, acute, the base cuneate, 3-nerved; both surfaces glabrous and with the nerves indistinct; the lower rather pale when dry, the edges remotely bristle-serrate; length 2 to 3·5 in.; breadth ·6 to 1 in.; petiole ·2 to ·5 in. *Cymes* or fascicles about as long as the petioles, few-flowered; pedicels slender, minutely bracteolate at the base, ·15 to ·45 in. long. *Flower-buds* ·15 in. long, much pointed. *Petals* 5, broadly ovate, abruptly acuminate. *Anthers* 5, twice as long as the filaments, minutely spurred at the base behind. *Capsule* subglobular, with 5 shallow grooves, glabrous, ·15 to ·2 in. in diam.; the placentas persistent, woody, rough on their outer surfaces. Naud. in Ann. Sc. Nat. Ser. 3, XV, 307; Miq. Fl. Ind. Bat. I, pt. I, 556; Kurz, For. Fl. I, 507. Triana Melast. 74, tab. VI, fig. 67; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 528;

Cogn. in DC. Mon. Phan. VII, 480. *Melastoma? littoreum*, Wall. Cat. 4087.

A sea-shore plant, SINGAPORE, JOHORE, MALACCA, PERAK. DISTRIB. Burma, Borneo, Java.

4. *OCHTHOCHARIS DECUMBENS*, King, n. sp. A creeping or decumbent shrub, 3 to 5 feet long; stems as thick as a swan's quill, rounded, often rooting at the nodes. *Leaves* thinly coriaceous, elliptic-lanceolate, shortly acuminate, rounded or cuneate at the base, the edges obscurely bristle-serrate, 5-7-nerved; upper surface glabrous; the lower pale and with a few minute, scattered scales; length 5 to 7.5 in.; breadth 2 to 3 in.; petioles unequal, stout, sparsely scaly, .5 to 1.25 in. long. *Flowers* in dense, axillary cymes shorter than the petioles, the pedicels short, bracteolate. *Calyx-tube* glabrous, faintly ribbed, the teeth 4, small. *Petals* 4, broadly ovate, acuminate. *Stamens* 8; the anthers curved, tapering to the truncate apex, slightly produced at the base and with a minute tubercle behind. *Capsule* depressed-globose, glabrous, faintly 4-grooved, .18 in. in diam.

PERAK; *King's Collector*, 2833, 10425.

7. *ANERINCLEISTUS*, Korth.

Shrubs; branches often round. *Leaves* petioled, ovate or lanceolate, entire, 3-7-nerved. *Flowers* small. *Calyx-tube* campanulate or funnel-shaped; lobes 4, usually very small. *Petals* 4, minute, glabrous. *Stamens* 8, equal; anthers attenuate at the top, opening by one pore, scarcely produced at the base; connective with or without a short spur. *Ovary* nearly free, 4-celled; style filiform, simple; ovules many. *Capsule* splitting by 4 large valves at the summit. *Seeds* exceedingly minute, cuneate-obovoid. DISTRIB. Species 9 or 10; Malaya and Burma.

Inflorescence umbellate; leaves small, oblong- or elliptic-lanceolate:—

Nearly glabrous in all its parts 1. *A. macranthus*.

More or less pilose:—

Calyx-tube mealy tomentose, the teeth narrow, glandular ciliate on the edges 2. *A. Scortechinii*.

Calyx-tube not tomentose but with many long spreading gland-tipped hairs, the teeth minute and without hairs 3. *A. Curtisii*.

Inflorescence a large panicle; leaves large, ovate:—

Panicle densely tomentose, leaves 7-nerved 4. *A. floribundus*.

Panicle clothed with short, flat, adpressed, scale-like hairs, leaves 5-nerved 5. *A. sublepidotus*.

1. *ANERINCLEISTUS MACRANTHUS*, King, n. sp. A small shrub; young branches with pale lenticels, glabrous except for a few adpressed hairs at the apices. *Leaves* nearly equal, elliptic-lanceolate, much narrowed to the base, the apex shortly acuminate; both surfaces

glabrous, the lower pale when dry; length 2·5 to 4 in., breadth ·8 to 1·5 in., petiole ·4 to ·8 in., strigose. *Umbels* axillary or terminal, usually solitary, 4- 5-flowered, on slender, sparsely strigose peduncles shorter than the leaves. *Flowers* (including the stamens) ·5 in. long. *Calyx-tube* infundibuliform, sparsely adpressed-pilose, nearly as long as the slender strigose pedicel; the mouth with 4 narrowly triangular acuminate, erect, persistent teeth nearly as long as the tube. *Petals* 4, ovate, acuminate, glabrous, slightly longer than the calyx-teeth. *Stamens* 8, slightly unequal, the alternate 4 shorter but of the same shape as the longer 4, the base in all emarginate, scarcely lobed but with a very short process behind. Scales of disc 4, their apices broadly truncate and slightly toothed. *Capsule* globose-ovoid, ·25 to ·3 in. long.

PERAK; at elevations of 2000 to 4000 feet, *Scortechini*; *Wray* 297, 1621.

A species near to *A. hirsutus*, Korth., but differing in being glabrous and in having larger flowers which, according to Mr. Wray, are pink. The umbels of this, when in bud, are enclosed in oblong, deciduous, sparsely strigose bracts.

2. *ANERINCLEISTUS SCORTECHINII*, King, n. sp. A slender shrub, 3 to 4 feet high; young branches, petioles and inflorescence with many spreading and sub-adpressed, gland-tipped hairs. *Leaves* very unequal (one of each pair very small), oblong, slightly narrowed to the rounded base, the apex acuminate, the edges ciliate; main nerves 3 to 5, the minor nerves transverse, rather faint; both surfaces usually glabrous, the upper sometimes sparsely strigose, the main nerves on both and the transverse on the lower surfaces bristle-hairy; length of the larger leaf of the pair 2·5 to 4 in., breadth ·8 to 1·4 in.; petiole ·3 to ·4 in.; the smaller leaf of the pair from one-fourth to one-half as large and sessile. *Inflorescence* axillary, solitary on a slender peduncle about as long as the smaller leaf, umbellately cymose, 6- to 10-flowered. *Calyx-tube* globose-campanulate, minutely mealy tomentose, about as long as the pedicel; teeth 4, narrow, reflexed, each ending in a bristle and the margins bearing 6 or 8 long straight hairs with small glandular apices. *Petals* 4, ovate, glabrous, shorter than the calyx-teeth, each with a slender, gland-tipped, reflexed hair at the apex. *Anthers* 8, equal, acute, very slightly lobed at the base and inappediculate; *style* thick, straight; stigma small. *Ovary* crowned by obtuse, sometimes crenulate scales.

PERAK; *Scortechini* 51, 450; *Curtis*.

This closely resembles *A. Curtisii*, Stapf, but is distinguished at once by the calyx which has its tube covered with minute mealy pubescence while the teeth are long, reflexed, with long glandular hairs on the edges, whereas in *A. Curtisii* the calyx-tube bears many long glandular hairs and the teeth are triangular, minute

and hairless. The leaves of *A. Curtisii* moreover are strigose between the nerves on both surfaces.

3. *ANERINCLEISTUS CURTISII*, Stapf in Kew. Bull. for 1892, p. 196. A small shrub, like *A. Scortechinii*, the young branches, petioles, and inflorescence spreading slightly and not gland-tipped; leaves as in *A. Scortechinii* but strigose on both surfaces. *Calyx-tube* with numerous subulate, gland-tipped, spreading hairs; the teeth minute, triangular and without hairs. *Anthers* blunt.

PENANG; *Curtis* 412.

4. *ANERINCLEISTUS FLORIBUNDUS*, King, n. sp. A shrub, about 15 feet high: young branches, petioles and panicles densely and shortly tawny-tomentose. *Leaves* unequal, ovate, shortly acuminate, 7-nerved at the rounded base, (the main nerve giving off a pair about 1 in. from the base); upper surface with a few short scattered bristles, the main nerves densely bristly-pubescent; lower surface with short coarse hairs especially on the nerves and veins; length 5 to 9 in.; breadth 4 to 5.5 in.; petiole 1 to 2 in., one leaf of each pair smaller than the other. *Panicle* terminal, solitary, longer than the leaves, much branched, the branches unequal and in pseudo-whorls, many-flowered, the ultimate branchlets few-flowered, cymose. *Calyx-tube* funnel-shaped, tapering into and longer than the pedicel, adpressed-pilose: the mouth truncate and with 4 small broadly triangular teeth and 4 alternating tufts of inwardly-directed hairs. *Petals* 4, shorter than the calyx-tube, broadly triangular or occasionally quadrate, apiculate, glabrous. *Stamens* 8, equal, or 2 smaller and sometimes suppressed; *anthers* curved, with two deep broad lobes at the base but no appendage. *Capsule* broadly obovoid, truncate, tapering at the base; seeds minute, broadly linear.

PERAK; *Scortechinii* 249 in part; *Ridley* 5342; *Curtis* 1299.

5. *ANERINCLEISTUS SUBLEPIDOTUS*, King, n. sp. A shrub, 10 to 15 feet high; young branches, petioles and inflorescence densely clothed with short, flat, adpressed, scale-like pale hairs. *Leaves* somewhat unequal, ovate, shortly acuminate, on long petioles, 5-nerved, entire; upper surface glabrous except for a few minute scale-like hairs, the main nerves hairy like the petiole; lower surface much reticulate, minutely lepidote-hairy, the middle nerve hairy like the petiole; length 4 to 8 in., breadth 2 to 4 in.; petiole 1 to 1.5 in. *Panicle* terminal, solitary, erect in flower, pendent in fruit, usually longer than the leaves, few-branched; the ultimate branches unequal, short, few-flowered, some of them in pseudo-whorls, pedicels less than .1 in. long. *Calyx-tube* .15 in. long, (when dry) reddish, clothed with scattered, adpressed scale-like hairs, tubular-campanulate; the teeth 4, short, acute. *Petals* 4, ovate, acuminate, glabrous, shorter than the calyx-tube. *Stamens* 8,

subequal, all yellow, curved, deeply lobed at the base but inappendiculate. *Capsule* obovoid, much tapered to the pedicel, .15 in. long (when dry), scabrid from the stiff, strigose, scale-like hairs. *Seed* minute subulate.

PERAK; *Scortechini* 310; *King's Collector* 8068.

NOTE.

I take the opportunity to describe here the undernoted new species from Borneo.

ANERINCLEISTUS GLOMERATUS, King, n. sp. A shrub; young branches, petioles, main nerves of leaves and inflorescence densely covered with short, coarse, adpressed, pale hairs. *Leaves* narrowly oblong, narrowed towards the base, the apex acuminate; upper surface glabrous but with a few scattered glands; lower surface with a few pale hairs of unequal length on the bold transverse veins; length 3.5 to 8 in.; breadth 1 to 2 in.; petiole .5 to 1.5 in. *Panicle* solitary, terminal, very narrow, bearing a few very short, almost sessile, 4- to 6-flowered umbels. *Flowers* on pedicels about half the length of the calyx-tube. *Calyx-tube* short, campanulate, pubescent; the mouth wide and with 4 short, triangular, acute, spreading teeth alternating with tufts of hair. *Petals* 4, narrowly oblong, spreading. *Stamens* 8, equal; *anthers* slightly lobed at the base, inappendiculate. *Ovary* 4-ridged, 4-celled; ovules numerous. *Capsule* sub-globular.

BORNEO; Sarawak, *Hullett* 257.

A species resembling *A. anisophyllus*, Stapf, in the shape of its leaves. The inflorescence is however very different; and in its short subsessile panicle recalls to one's memory *A. Beccarianus*, from which its leaves distinguish it at once.

8. *SONERILA*, Roxb.

Low herbs, rarely half-shrubs. *Leaves* membranous or more or less fleshy, opposite, those of a pair similar in shape, although often very different in size, or distinctly heteromorphous and then often apparently alternate, usually more or less oblique, 3-7-nerved from the base or near the base, rarely pinnate-nerved. *Flowers* pink or white, in scorpioid simple or pseudo-umbellate cymes, 3-nerved. *Calyx* sub-cylindrical, turbinate or campanulate, 3-lobed or 3-toothed. *Petals* ovate, obovate or oblong, acute, acuminate or obtuse. *Stamens* 3, equal, rarely 6 and slightly unequal; *anthers* linear, oblong or lanceolate, obtuse, acute or (often long) acuminate, minutely 2-lobed at the base, without appendages, dehiscing with apical pores. *Ovary* attached to the calyx-tube by narrow longitudinal septa, depressed at the apex, 3-celled; *style* filiform; *stigma* punctate or capitellate. *Fruit* enclosed in the persistent, ultimately spongy calyx-tube and forming with it a usually more or less trigonous, subcylindrical, turbinate or hemispherical false capsule, dehiscing from the centre of the depressed top with 3 valves or 6 fine teeth. *Seeds* minute, numerous, ovoid, pyramidal or clavate,

smooth or asperulous; raphe usually thick, spongy. Species over 100 throughout tropical Asia.

Leaves similar, although often very unequal in size. Stamens 3. Fruit usually smooth (see No. 12-14); valves entire, distinct, exceeding the margin of the mature calyx (§ *Eu-Sonerila*):—

Erect or ascending herbs with fibrous roots and without rhizome:—

Calyx very slender (also in fruit); stem with 2 somewhat raised, commissural lines. Very scantily hairy or glabrous, often much branched and small- or narrow-leaved (except No. 1) herbs:—

Leaves ovate, 1-1·7 in. by ·7-·9 in. 1. *S. epilobioides*.

Leaves much smaller or at least very much narrower:—

Anthers ·12-·18 in. long:—

Leaves oblong to elliptic-oblong, ·3-·5 by ·15-23 in. 2. *S. calaminthifolia*.

Leaves lanceolate, 1-1·75 in. by ·15-·23 in. ... 3. *S. hyssopifolia*.

Anthers ·06-·09 in. long 4. *S. erecta*.

Calyx more or less oblong- or ovoid-campanulate; fruit turbinate or obpyramidal. Stem terete or quadrangular:—

Leaves more or less ovate, long acuminate, 1-2 in. by ·4-1 in. or still smaller, acutely and coarsely toothed, thin, 3-5-nerved from the very base; petioles long, very slender 5. *S. tenuifolia*.

Leaves usually larger, not coarsely toothed:—

Upper side-nerves starting from above the base:—

Leaves pinnatinerved, acute or acuminate at the base 6. *S. flaccida*.

Leaves not pinnatinerved (rarely subpinnatinerved in No. 7); all the side-nerves springing from near the base, rarely the uppermost from near the middle:—

Cymes distinctly peduncled:—

Anthers subacute, ·09-·12 in. long; leaves membranous, rounded or subcordate at the base 7. *S. andamanensis*.

Anthers slender, acuminate, ·2-·3 in. long:—

Stem, petioles and inflorescence minutely tomentose; leaves thinly membranous, subcordate at the base on very long and slender petioles 8. *S. populifolia*.

Stem, petioles and inflorescence with long hairs; leaves acute or rounded, but not subcordate at the base:—

Leaves membranous, more or less oblong, usually acute at the base ... 9. *S. pallida*.

Leaves somewhat fleshy, rounded at the base :—

Hairs more or less spreading, often very long, particularly on the petioles and near the leaf margins; leaves light-brown beneath ... 10. *S. rudis*.

Hairs adpressed, very soft; leaves glaucous beneath with rufous hairs ... 11. *S. mollis*.

Cymes sessile, reduced to few-flowered fascicles :—

Unbranched or almost unbranched herbs :—

Leaves fleshy, very dark and glabrous above, glaucous or pale-brown with rufous nerves beneath; calyx with scattered gland-tipped hairs ... 12. *S. albiflora*.

Leaves membranous, more or less covered on both sides with rufous flexuous hairs; calyx densely hirsute ... 13. *S. lasiantha*.

Suffrutescent, much branched ... 14. *S. suffruticosa*.

All the nerves springing from the very base of the leaf; adult leaves quite glabrous, broadly elliptic, fleshy ... 15. *S. elliptica*.

Herbs with short stems, springing from a creeping rhizome and with usually crowded to rosulate leaves and terminal or subterminal peduncled cymes :—

Leaves 3-7 in. by 2-4 in., 7-nerved from the very base with conspicuous subhorizontal transverse veins :—

Stem, petioles and peduncles very succulent, stout ... 16. *S. succulenta*.

Stem, petioles and peduncles usually slender ... 17. *S. repens*.

Leaves small; uppermost side-nerves springing from above the base; transverse veins indistinct or 0 :—

Leaves oblong to lanceolate-oblong, 2-3·7 in. by ·3-1·4 in., pinnatinerved ... 18. *S. muscicola*.

Leaves much smaller, not or very indistinctly pinnatinerved, lateral nerves springing from below the middle :—

Leaves oblong-lanceolate to lanceolate, acute at both ends ... 19. *S. sarosa*.

Leaves ovate to elliptic or oblong, rounded or subcordate at the base :—

Stem 1-3 in. long; leaves broad, crowded, in about 3 pairs; petioles 3-7 in. long :—

Leaves entire, not ciliate; ·9-1·7 in. by ·6-1·2 in.; petals ·35 in. long; anthers ·15-2 in. long ... 20. *S. congesta*.

Leaves toothed, ciliate, ·4-8 in. by ·4-6 in.; petals ·25 in. long; anthers ·12-15 in. long ... 21. *S. Griffithii*.

Stem shorter; leaves narrower, more numerous, subrosulate; ·8-1·4 in. by ·4-6 in., often beautifully variegated; petioles up to 1 in. long, very slender ... 22. *S. Cyclaminella*.

Leaves of each pair similar in shape, but very unequal in size or one quite suppressed. Stamens 6. Fruit as in *Eu-Sonerila* (§ *Sonerilopsis*, *Miq.*) 23. *S. heterostemon.*

Leaves of each pair very dissimilar in shape and size, one very small and more or less rotundate or reniform-cordate, often deciduous. Cymes usually from the axils of the small leaves, hence often apparently leaf-opposed. Anthers 3, oblong, obtuse, not over .15 in. long. Fruit more or less turbinate or semiglobose, obscurely trigonous, usually conspicuously muricate; valves not or very slightly exceeding the margin of the mature calyx, often not or indistinctly separating from each other at the periphery, but each of them always splitting into 2 membranous teeth in the depressed centre of the fruit. (§ *Hexodon*, *Stapf*):—

Cymes distinctly, densely and persistently bracteate, distinctly and often long peduncled:—

Cymes simple or 2 or more, sessile on a common peduncle, forming a dense head:—

Cymes simple, at length 1-1.5 in. long; leaves obliquely oblanceolate to obovate-oblong, 3-7 in. by 1-1.5 in.:—

Leaves fleshy, glabrous with the exception of the minutely strigillose nerves of the underside ... 24. *S. integrifolia.*

Leaves membranous, with rather long and spreading hairs beneath and along the margins ... 25. *S. bracteata.*

Cymes usually 2 or more, sessile on a common peduncle, very short, gathered in a dense head; leaves obliquely obovate, elliptic or oblong, 4-6 in. by 1.75-3 in. 26. *S. capitata.*

Cymes usually 2 or more on a common peduncle, each with a special peduncle, gathered in a loose umbel; leaves obliquely elliptic, 3-5 in. by 1.75-2.75 in. ... 27. *S. caesia.*

Cymes ebracteate, or indistinctly or deciduously bracteate:—

Cymes sessile or subsessile; peduncle, if any, less than .5 in., when mature; fruit muricate:—

Cymes dense, indistinctly bracteate, sessile:—
Bracts linear, usually minute, or suppressed; calyx pubescent; leaves fleshy, firm when dry, glabrous above, shortly and adpressedly pubescent or tomentose beneath 28. *S. Nidularia.*

Bracts filiform, ciliate, hidden among long spreading hairs; calyx shaggy; leaves membranous, very hairy on both sides 29. *S. brachyantha.*

Cymes subsessile somewhat loose, ebracteate or deciduously bracteate:—

Leaves obliquely obovate-lanceolate to oblong, 2.5-6 in. by 1-2.5 in.:—

Leaves somewhat fleshy, firm, when dry with conspicuous transverse veins; pedicels very

- slender, to .25 in. long; calyx with short, fine, spreading hairs; fruit .08-.1 in. long, finely muricate 30. *S. microcarpa*.
- Leaves membranous with conspicuous raised transverse veins; pedicels slender, .08-.12 in. long; calyx with long spreading hairs; fruit .15-.18 in. long, coarsely muricate 31. *S. costulata*.
- Leaves obliquely elliptic, 4-6 in. by 2.2-3.5 in.; fruit .2 in. long 32. *S. macrophylla*.
- Cymes distinctly, often long, peduncled:—
- Cymes 2 or more gathered in an umbel, or if simple, then with a pair of (often minute) leaves at the middle:—
- Calyx hairy; fruit muricate:—
- Cymes usually compound, minutely bracteate, axis shaggy; leaves more or less hairy all over 33. *S. paradoxa*.
- Cymes usually simple, deciduously bracteate; bracts small; axis shortly hairy; leaves glabrous (in the Peninsular specimens) with the exception of the very shortly and scantily hairy nerves and veins of the underside 34. *S. begoniaefolia*.
- Calyx glabrous; fruit smooth 35. *S. glabriflora*.
- Cymes simple, ebracteate; peduncle naked:—
- Softly hairy or tomentose all over:—
- Leaves oblong-elliptic or obovate, 2.2-2.8 in. by 1-1.2 in., petals .18 in. long 36. *S. elatostemoides*.
- Leaves oblong to lanceolate-oblong, 3-6 in. by 1-1.5 in.; petals .35 in. long 37. *S. bicolor*.
- Shortly tomentose on stem, petioles and peduncles and pubescent on the nerves on the underside of the leaves, otherwise glabrous; fruit smooth 38. *S. Calycula*.

1. *SONERILA EPILOBIOIDES*, Stapf and King. An erect, sparingly branched, almost quite glabrous herb, about 6 in. high. *Stem* with 2 prominent very minutely hairy lines or quite glabrous. *Leaves* of each pair similar in shape and equal or almost equal in size, ovate, acute or subacute, acuminate at the base, minutely toothed, thinly membranous, green, glabrous or with few scattered, soft, adpressed hairs above, 1-1.75 in. long by .7-9 in. broad, finely 5- (rarely 3-) nerved from the very base with a few delicate side nerves higher up; petiole .4-.5 in. long, slender. *Cymes* terminal, peduncled, rather loosely 5-6-flowered, glabrous; peduncle .6-.8 in. long, slender; pedicels at length up to .2 in. long, very slender. *Calyx* very slender, obconical, .25-.3 in. long; teeth broad, triangular, mucronulate. *Petals* elliptic-oblong, acuminate-apiculate, .2 in. long, pink. *Anthers* subacute; .12 in. long. *Style* filiform, .12-.15 in. long; stigma subcapitate. Mature *fruit* unknown.

KEDAH; Santow, on the limestone islands, *Curtis* 2114!

2. *SONERILA CALAMINTHIFOLIA*, Stapf and King. An ascending or almost prostrate branched herb, from a few inches to 1 ft. high, with very minute, spreading hairs all round or along the 2 commissural lines of the stem and branches, or glabrescent below and with scattered, adpressed, short, straight or flexuous hairs on the upper side of the leaves. *Stem* terete below, quadrangular in the upper part, purple, like the branches slender and often flexuous. *Leaves* petioled, rarely the uppermost subsessile and then sometimes apparently whorled, those of a pair similar in shape and size, symmetrical, oblong to elliptic-oblong, subobtuse, narrowed into the petiole, acutely toothed with the teeth usually mucronate and the margin revolute, rather stoutly membranous or almost fleshy, pale-green, purple along the midrib, .3-5 in. by .15-.23 in., 1-nerved or with 1 very fine side-nerve on each side from near the base; petioles .08-12 in. or less. *Cymes* terminal, 2-5-flowered, ultimately lax or flowers solitary; peduncles filiform, .4-8 in. long; pedicels very slender, about .08 in. long. *Calyx* slender, obconical-oblong, .15-.2 in. long; teeth triangular, broad, acute. *Petals* elliptic, cuspidate, about .33 in. long, pink. *Anthers* shortly acuminate, .12-.17 in. long. *Style* filiform, .2 in. long; stigma punctiform. *Fruit* oblong, subtrigonus, smooth, .25-.3 in. by .08-1 in.

PERAK; Gunong Batu Pateh, 4300 ft., *Wray* 1022!

3. *SONERILA HYSSOPIFOLIA*, Stapf and King. An erect, simple or branched herb, 6-9 in. high, with two lines of short, curled hairs on the stem and branches, and with whitish, flexuous, longer hairs on the upper side of the leaves. *Stem* subterete below, quadrangular above. *Leaves* sessile or petioled, those of a pair similar in shape and size, lanceolate, subacute, cuneate at the base or the uppermost sessile and rounded at the base, symmetrical, minutely and somewhat remotely toothed with very acute or mucronate teeth, membranous, green, pale below, 1-1.75 in. by .15-.3 in., indistinctly 3-nerved from near the base; petioles very variable in length, up to .4 in. long, or 0. *Cymes* few-flowered, at length lax; peduncles .8-1 in. long, very slender, pedicels very slender, .04-.08 in. long. *Calyx* very slender, almost cylindrical, .24-.28 in. by .04 in.; teeth triangular, mucronulate. *Petals* elliptic-oblong, acute, .27 in. long, pink. *Anthers* acuminate, .12-.18 in. long. *Style* filiform, about .18 in. long; stigma subcapitate. *Fruit* trigonus-cylindric, slightly obconical at the base, .5 in. by almost .1 in.

PERAK; Gunong Hijan; *Scortechini* 1426!

4. *SONERILA ERECTA*, Jack in Malay Misc. I, 7. A copiously branched herb, 1-1.5 ft. high, more or less hairy with the exception of the inflorescence, hairs flexuous, finely pointed, those of the stem and branches short, along 2 lines, those of the leaves longer, whitish, all over both surfaces. *Stem* subterete below, quadrangular above,

branched all along, branches more or less divaricate, 1 or, in luxuriant specimens, 2 from each leaf axil; often branched again. *Leaves* sessile or petioled, often apparently whorled on the upper or, in vigorous specimens, almost on all nodes, those of a pair similar in shape and size, lanceolate or ovate, acute or subacute, contracted or subcuneate at the base, rather symmetrical, entire or minutely toothed, membranous, green or greyish when very hairy, '4-1·2 in. by '2-'4 in., indistinctly 3-nerved from near the base; petioles slender, very variable in length, up to '3 in. long, or 0. *Cymes* 2-9-flowered, at length very lax; peduncles filiform, '4-2 in. long; pedicels very slender, '04 in. long or hardly any. *Calyx* very slender, almost cylindrical, '15-'2 in. by '03 in., teeth triangular, short. *Petals* elliptic-oblong, cuspidate-acuminate, '15 in. long, pink. *Anthers* ovate-lanceolate, acute or subacute, '06-'09 in. long. *Style* filiform, '12 in. long; stigma punctiform. *Fruit* almost cylindrical, slightly trigonous, smooth, '3-'45 in. by '06-'08 in. *Hook. Bot. Misc.* II, 63; *Blume in Flora* (1831), 491; *Benn. Pl. Jav. Rar.* 217; *Naud. in Ann. Sc. Nat. Ser. 3, XV*, 324; *Miq. Fl. Ind. Bat. I*, 563; *Triana in Trans. Linn. Soc. XXVIII*, 75; *C. B. Clarke in Hook. f. Fl. Brit. Ind. II*, 530; *Cogn. in DC. Monogr. VII*, 492; *Stapf in Ann. Bot. VI*, 304.

PENANG; Government Hill, *Curtis, Porter* in *Wall. Cat.* 4092; *Maingay 2214* (778, *Kew Distrib.*). *DISTRIB.* Northwards as far as Moulmein.

VAR. *flexuosa*, *Stapf and King*. *Stems* ascending, like the very slender branches more or less flexuous. *Leaves* lanceolate to linear-lanceolate, acuminate at the base, '4-'8 in. by '12-'2 in., more or less pubescent or scaberulous from very short hairs, mainly above, margins usually finely but sharply toothed and often revolute. *Cymes* 3-1-flowered with capillary peduncles. *Fruit* '27-'35 in. long, by '6-'8 in.

PENANG; on rocks, 2000 ft., *Curtis 1238*! PERAK; Larut, on rocks in rich, moist soil, 300 to 600 ft., *Kunstler 2364*! *Scortechini 91*!

VAR. *discolor*, *Stapf and King*. *Stems* ascending or erect, branches very slender, slightly flexuous, very minutely hairy along lines or almost glabrous. *Leaves* oblong-lanceolate to ovate-lanceolate, minutely toothed, narrowly revolute on the margins, very pale beneath, 3-5-nerved near the base, nerves fine, but rather distinct. *Cymes* 4-1-flowered, rather congested, also when mature. *Anthers* '08-'09 in. *Fruit* oblong-cylindrical, '3-'35 in. by '08 in.

PERAK; *Scortechini 160*!

5. *SONERILA TENUIFOLIA*, *Blume in Flora 1831*, 491. An erect or ascending, branched or unbranched herb, 6-12 in. high, usually with scattered, spreading, gland-tipped hairs in the upper part of the stem, on the peduncles and pedicels, and near the mouth of the calyx and with few

adpressed, finely attenuated, pale hairs on the upper side of the blades, rarely almost quite glabrous. *Stem* slender, terete below, more or less quadrangular upwards. *Leaves* of a pair similar in shape, but unequal in size, ovate to ovate-lanceolate, long acuminate, symmetrical or slightly asymmetrical and rounded at the base, acutely and coarsely toothed, thinly membranous, dark- or pale-green, the larger 1-2 in. by $\cdot 4$ -1 in., distinctly 3-, rarely 4-5-nerved from the very base, very faintly pinnate-nerved higher up; petioles very slender, reaching 1.5 in. in length, purple. *Cymes* 1-6-flowered, almost pseudo-umbellate; peduncle $\cdot 5$ -1 in. long, like the slender pedicels purple or crimson, the latter $\cdot 25$ - $\cdot 3$ in. long. *Calyx* campanulate-oblong to ovoid-oblong, about $\cdot 15$ in. long; teeth distinct, triangular. *Petals* elliptic, apiculate, $\cdot 3$ - $\cdot 35$ in. long, glabrous, rose-coloured. *Anthers* lanceolate-acuminate, acute or sub-obtuse, $\cdot 12$ - $\cdot 13$ in. long. *Stigma* capitate. *Fruit* trigonous, obconical, $\cdot 23$ - $\cdot 27$ in. long, smooth; valves $\cdot 23$ in. broad. Benn. Pl. Jav. Rar. 211, t. 44; Naud. in Ann. Sc. Nat. ser. 3, XV, 324; Miq. Fl. Ind. Bat. I, 563. Triana in Trans. Linn. Soc. XXVIII, 76; C. B. Clarke in Hook. f. Fl. Brit. Ind. VIII, 536. Stapf in Trans. Linn. Soc. 2nd Ser. IV, 156; Cogn. in DC. Monogr. VII, 502; Stapf in Ann. Bot. VI, 301.

PERAK; *Scortechini* 312! *Kunstler* 722! *Wray* 427! on Gunong Batu, 4500 ft., *Wray* 273! 406. MALACCA; Mt. Ophir, *Maingay* 2582!
DISTRIB. Sumatra, Java, Borneo.

VAR. *hirsuta*, Stapf and King. Leaves hairy on both sides; hairs copious at least above, longer, wavy or curled, less adpressed than in the type; blades often very small (0.6 in. by 0.3 in.); flowers solitary.

PERAK; *Scortechini* 790! Larut, top of Gunong Bubu, 5000-5300 ft., *Kunstler* 7406! *Wray* 3841!

6. *SONERILA FLACCIDA*, Stapf and King. An erect or ascending, usually branched herb, $\cdot 5$ -1 ft. high, with a very fine, furfuraceous, dark rusty and often scanty indumentum in the lower part and on the under-side of the leaves (at least on the nerves), otherwise glabrous. *Stem* quadrangular. *Leaves* of a pair similar, equal or unequal in size, oblong or oblong-elliptic, subacute or subacuminate at both ends, or the tips obtuse, sometimes decurrent at the base, entire or nearly so, symmetrical or more or less asymmetrical, thinly membranous, dark- or light-green and often spotted with white circular or elliptic spots above, whitish green beneath, 2-4 in. by $\cdot 75$ -1.75 in., pinnate-nerved, distinct side-nerves usually 3 on each side, the others like the tertiary nerves very faint or quite obscure; petiole up to $\cdot 6$ in. long, often very short, slender. *Cymes* terminal and axillary, short, few- to 9-flowered, peduncled, peduncle very slender, $\cdot 75$ -1 in. long; pedicels very slender, $\cdot 08$ - $\cdot 15$ in. long. *Calyx* slender, obconical to oblong, $\cdot 13$ - $\cdot 15$ in. long, rose-coloured, teeth triangular, very short and broad. *Petals* oblong, acute, $\cdot 15$ in.

long, rose-coloured. *Anthers* acute, .12 in. long. *Style* filiform; stigma capitate. *Fruit* trigonous, truncate-obovate, .2 in. long, smooth; valves .12 in. broad.

PERAK; Gunong Panti, 600–800 ft., *Kunstler* 219! *Ridley* 4184! Gunong Inas, 3500 ft., *Wray* 4066! 4067!

Certain small specimens, collected by Scortechini in Perak (272), represent only a dwarf state of *S. flaccida*; their larger leaves measure 1–1.5 in. by .6–.8 in.

7. *SONERILA ANDAMANENSIS*, Stapf and King. An erect or ascending, branched or unbranched herb, 3–6 in. high, more or less hirsute, particularly on the stem and petioles, with flexuous, finely pointed hairs. *Stem* reddish-brown when dry, quadrangular. *Leaves* rather approximate, those of a pair similar in shape and size, or more or less unequal, ovate to ovate-oblong, acute or subacuminate, rounded or subcordate and often slightly asymmetrical at the base, membranous, green or purple above, purplish glaucous below, length 1.5 to 3.3 in., breadth 1 to 1.7 in., 5–8-nerved from below the middle, the lower nerves more or less opposite, the uppermost 1 or 2 usually alternate, transverse veins oblique, fine or obscure; peduncle .5–1.5 in. long. *Cymes* few- to many-flowered, much contracted, peduncles solitary and terminal, or 2–4 from the top and the uppermost leaf-axils, 1–2 in. long; pedicels slender, up to .1 in. long, like the flowers with scanty and sometimes minutely gland-tipped hairs. *Calyx* very slender, obconical, up to .2 in. long; teeth short, broad, triangular. *Petals* elliptic, acuminate, .25 in. long, rose-coloured. *Anthers* ovate-lanceolate, subacute, .09–.12 in. long. *Style* filiform, .2–.25 in. long; stigma capitate. *Fruit* oblong with a cuneate base, .22–.27 in. long, smooth; valves scarcely .1 in. broad.

ANDAMANS; Mount Harriet near Port Blair, on rocks, *King's Collector* 48!

8. *SONERILA POPULIFOLIA*, Stapf and King. An erect or ascending, simple or sparingly branched herb, 6–9 in. high, more or less covered with minute hairs and with a few soft, adpressed, whitish, small bristles on the surface and the margins of the ultimately often glabrescent leaves, with the hairs of the inflorescence often minutely gland-tipped. *Stem* finely rusty-tomentose, subterete below, quadrangular above. *Leaves* of a pair similar in shape and equal or somewhat unequal in size, ovate, acute or acuminate, usually minutely cordate at the base, with the lobes often more or less unequal and close, subentire or toothed in the upper part, thinly membranous, light-green, 1.5–3 in. by 1.2–1.75 in., finely 7-nerved from near the base, upper pair .2–.3 in. from the base; petioles very slender, 1–2 in. long, finely tomentose. *Cymes* few- to 12-flowered, much contracted and almost umbelliform, terminal; peduncle slender, .5–1.2 in. long; pedicels slender, .15–.22 in. long.

Calyx subcampanulate-oblong, .18-.2 in. long; teeth broad, triangular. *Petals* elliptic, shortly acuminate, .3-.4 in. long, deep- to blueish-pink. *Anthers* acuminate, tips sometimes very fine and curved, .2-.3 in. long. *Style* filiform, .35-.45 in. long; stigma minutely capitate. *Fruit* trigonous, truncate-obovoid, .2-.25 in. long, smooth, often finely puberulous; valves .15-.16 in. broad.

PERAK; *Scortechini* 136! 300-500 ft., *King's Coll.* 10055! Larut, dense jungle, 500-800 ft., *King's Coll.* 5791! Briaiah plains, *Wray* 4201! Tapah, *Curtis*!

The uppermost pair of leaves is often much reduced, resembling a pair of bracts. One of the leaves of the preceding pair is sometimes suppressed, whilst the peduncle and the petiole of the other leaf are so turned that the latter seems to form the continuation of the axis; hence the former appears to spring from a long petiole. This is chiefly the case with the inflorescences which terminate branches.

9. *SONERILA PALLIDA*, Stapf and King. An ascending, branched or unbranched herb, 6-12 in. high, hirsute all over, but chiefly on the stems and petioles, hairs pale reddish when dry, those of the inflorescence short, stiff and spreading. *Stem* decumbent at the base, rooting in the lower part, quadrangular. *Leaves* of a pair similar in shape, but usually rather unequal in size, oblong to ovate-oblong, acuminate, symmetrical or more or less asymmetrical and acute (rarely obtuse) at the base, minutely denticulate, membranous, light green, the larger 1.5-4 in. by .8-1.8 in., finely but distinctly 5-7-nerved from near the base, the upper pair .4-.6 in. from the base, petioles up to .6-.75 in. long. *Cymes* few- to 8-flowered, short, on apparently terminal peduncles; peduncles slender, 1-2 in. long; pedicels .08-.15 in. long, slender. *Calyx* slender, trigonous, obconical-campanulate, .15-.2 in. long; teeth distinct, triangular. *Petals* elliptic-oblong, apiculate, .45-.5 in. long, with a line of short, stiff, spreading hairs on the back, pale pink. *Anthers* acuminate, slender, .23-.24 in. long. *Style* filiform, stigma punctiform. *Fruit* trigonous, obconical, .25-.3 in. long, sparingly muricate, valves .15 in. broad.

PERAK; Gunong Inas, 5000 ft., *Wray* 4100! MALACCA; Bujong, *Curtis* 3155! SELANGORE; Bukit Hitam, 2500-3500 ft., *Kelsall*!. *Ridley* 7320!

10. *SONERILA RUDIS*, Stapf and King. A semidecumbent, sparingly branched or unbranched herb, about 1 ft. high, densely clothed with short, or often very long, fine and spreading, curved or curled hairs on the stem and petioles, with somewhat coarse, more or less adpressed hairs on both sides of the leaves and gland-tipped, spreading hairs on the peduncles, pedicels, calyx and the midrib of the petals, hairs reddish when dry. *Stem* often rooting in the lower part, terete or subquadrangular

in the upper part. *Leaves* of a pair similar, subequal or rather different in size, ovate to oblong or elliptic, acute or subacuminate, rounded at the base, entire, somewhat fleshy, green above, pale beneath, distinctly 7-nerved from near the base (upper pair $\cdot 2\text{--}25$ in. above the base); petioles $\cdot 4\text{--}1\cdot 2$ in. long. *Cymes* 2-6-flowered, umbelliform, terminal, peduncled; peduncle slender, $\cdot 5\text{--}1$ in. long; pedicels $\cdot 08\text{--}1$ in. long. *Calyx* rather slender, subcampanulate, $\cdot 12\text{--}15$ in. long; teeth short, broad, triangular. *Petals* elliptic to obovoid, obtuse or subacute, $\cdot 5\text{--}6$ in. by $\cdot 35\text{--}4$ in., pink, with a line of gland-tipped hairs on the back. *Anthers* acuminate, slender, $\cdot 23\text{--}27$ in. long. *Style* filiform; stigma punctiform. *Fruit* trigonous, shortly obconical, about $\cdot 27$ in. long, muricate, on stout muricate pedicels; valves $\cdot 2$ in. broad.

PERAK; *Scortechini*! Tumbung Parbat, *Scortechini* 422! Gunong Batu Pateh, 4500 ft., *Wray* 260. MALACCA; Bujong, *Curtis* 3297!

11. *SONERILA MOLLIS*, Stapf and King. An ascending, sparingly branched or unbranched herb, about 1 ft. high, densely and adpressedly tomentose along stem and petioles, and on the underside of the leaves along the nerves, and besides almost cobwebby on both sides of the young leaves; all the hairs soft and reddish when dry. *Stem* often rooting in the lower part, terete or subquadrangular in the upper part. *Leaves* of a pair similar, but differing more or less in size, elliptic to ovate-elliptic, shortly and acutely acuminate, rounded at the base, entire, somewhat fleshy, very dark green and quite glabrous above when adult, pale and glabrescent beneath between the nerves, the larger 2-3 in. by 1-2 in., distinctly 5-7-nerved from near the base (upper pair of side nerves $\cdot 25\text{--}27$ in., distant from the base); petioles $\cdot 4\text{--}1$ in. long. *Cymes* 2-4-flowered, umbelliform or flowers solitary, terminal, peduncled, glabrous; peduncle about $\cdot 5$ in. long, slender; pedicels $\cdot 2\text{--}24$ in. long, very slender. *Calyx* slender, subcampanulate, $\cdot 18\text{--}2$ in. long; teeth very short and broad, triangular. *Petals* elliptic-oblong, acute, $\cdot 4$ in. long. *Anthers* acuminate, $\cdot 2\text{--}22$ in. long. *Style* filiform; stigma punctiform. *Fruit* trigonous, shortly obconical, $\cdot 24$ in. long, smooth; valves $\cdot 2\text{--}24$ in. long.

PERAK; *Wray*, *Scortechini*! Summit of Gunong Batu Pateh, 6700 ft., *Wray* 375!

12. *SONERILA ALBIFLORA*, Stapf and King. An ascending or suberect, more or less branched herb, 9-12 in. high, densely and adpressedly hirsute along stem and petioles and more sparingly on the underside of the leaves, and with gland-tipped spreading hairs on pedicels, calyx and midrib of petals. *Stem* rather slender, terete or subquadrangular in the upper part. *Leaves* of a pair similar and rather equal in size, lanceolate to ovate- or obvate-lanceolate, acute or subacuminate at both ends, entire or almost so, fleshy, very dark green (almost black when

dry) and glabrous above, pale and adpressedly hairy beneath (at least on the nerves), 1-3 in. by .5-1.25 in., distinctly 3-5-nerved from near the base; petioles .2-4 in. long. *Flowers* axillary and terminal, solitary or paired; pedicels .1-2 in. long, slender. *Calyx* subcampanulate, ovoid, .1 in. long; teeth distinct, broadly triangular. *Petals* oblong, apiculate, .2 in. long, white, with a line of gland-tipped hairs beneath. *Anthers* oblong, obtuse, .08-1 in. long. *Style* slightly and gradually thickened upwards; stigma punctiform. *Fruit* trigonous, shortly obconical, .2 in. long, very scantly muriculate; valves .2 in. broad.

PERAK; *Scortechini* 1886! Gunong Kledang, 1000 ft., *Curtis* 3293! *Ridley* 9691! *Goldham*! Kinta in dense jungle, 3500-4000 ft., *King's Collector* 7169!

13. *SONERILA LASIANTHA*, Stapf and King. An erect herb, 4-6 in. high, hirsute all over with flexuous, finely pointed, rufous hairs. *Stem* terete, with the hairs more or less adpressed. *Leaves* of a pair similar in shape, very unequal in size, obliquely lanceolate or subovate, acute, attenuated at the base, membranous, green above, pale beneath, the larger 1.5-3 in. by .6-.8 in., with 2-3 side-nerves in the broader and 1 in the narrow half, the uppermost .75-1 in. above the base; petiole slender, .3-.6 in. long. *Fuscicles* few-flowered, terminal and axillary, sessile; pedicels rather stout, .1-.15 in. long. *Calyx* obconical, densely hirsute, .15-.18 in. long. *Petals* oblong, cuspidate-acuminate, .12 in. long. *Anthers* oblong, subacute, .06 in. long. *Style* filiform, rather stout; stigma punctiform. *Fruit* broad, obconical, muricate, to .25 in. long; valves .18-.2 in. broad.

PERAK; Gunong Bubu, *Wray* 3863! (in part).

The specimen which we have here in view is so different in habit and in the size of the comparatively long peduncled leaves from the others bearing the same number in *Wray's* collection, but described under *S. suffruticosa*, that we believe ourselves justified in considering it for the present as a distinct species.

14. *SONERILA SUFFRUTICOSA*, Stapf and King. An erect, repeatedly branched half-shrub, over 1 ft. high, shaggy all over from coarsely adpressed, crimson (reddish, when dry) hairs, or glabrescent at length at the base. *Stem* terete, woody below, hollow. *Leaves* mainly crowded near the tips of the branches, those of a pair similar in shape, but rather unequal in size, oblong to ovoid-oblong, acute, more or less asymmetrical or almost symmetrical and acute at the base, obscurely serrate or toothed, thickly membranous, dark green above, paler beneath, the larger 1-1.4 in. by .4-.6 in., 3-5-nerved from near the base; petioles .25 in. long to very short. *Flowers* unknown (petals white according to *Wray*). *Fruits* axillary, solitary or in pairs on stout short pedicels, obconical, .2 in. long, strigose from tubercle-based hairs, or muricate from their persistent bases; valves .12 in. broad.

PERAK; Larut, Gunong Bubu, 5000 ft., *Wray* 3863! (in part).

15. *SONERILA ELLIPTICA*, Stapf and King. An erect or ascending, usually unbranched herb, 6–9 in. high, with a very fine, furfuraceous, dark-rusty indumentum in the lower parts and on the young leaves, glabrous or soon glabrescent higher up. *Stem* somewhat stout and succulent, terete. *Leaves* of a pair similar in shape, slightly unequal or equal in size, broadly elliptic, rarely ovate or almost orbicular, very obtuse, usually symmetrical and rounded or subcordate at the base, minutely and inconspicuously toothed, thick, fleshy, dark-green, often mottled with white along the nerves above, waxy yellowish-green beneath, 1–2·5 in. by ·75–2 in., distinctly 5-nerved from the very base, upper nerves usually quite indistinct; petioles 1–2 in. long. *Cymes* many-flowered, dense, axis at length up to ·75 in. long; peduncle slender, 1–2·5 in. long, pedicels at length up to ·2 in. long. *Calyx* obconical, trigonous, ·12 in. long, glabrous, teeth distinct, broad, triangular. *Petals* oblong, apiculate, ·2–·23 long, glabrous, pinkish white. *Anthers* oblong, obtuse, scarcely ·1 in. long. *Stigma* punctiform. *Fruit* trigonous, obconical, ·15 in. long, smooth; valves ·12 in. broad.

PERAK; Kinta, on limestone rocks, 500–800 ft., *Kunstler* 7037! 7225! *Sungie Siput*, *Curtis* 3156!

16. *SONERILA SUCCULENTA*, Stapf and King. A succulent, erect herb, quite glabrous with the exception of a very few gland-tipped hairs on the calyx. *Stem* stout, very short to 3 in. long, very fleshy. *Leaves* few, crowded, of a pair equal, symmetrical or almost so, long-petioled, elliptic to ovate-elliptic, rather long and acutely acuminate, rounded at the base or very slightly subcordate, entire, very thinly membranous when dry, 6–7 in. by 3–4 in., 7-nerved from the base, with lax, subhorizontal transverse nerves, petioles succulent, 2–4 in. long. *Cymes* terminal and axillary, 2–5 on a long common peduncle, subbracteate, rather few-flowered, very short and dense; common peduncle stout, 4–7 in. long; special peduncles 1 to over 3 in. long, bracts very minute, subulate, the lower soon deciduous; pedicels hardly any. *Calyx* oblong-campanulate, up to ·25 in. long; teeth short, triangular. *Petals* oblong, cuspidate-acuminate, ·18 in. long. *Anthers* long-acuminate, incurved, over ·25 in. long. *Style* ·35 in. long; stigma subcapitate. *Fruit* subtrigonus, obconical, smooth, up to ·25 in. long; valves over ·15 in. broad.

PERAK; Maxwell's Hill, 3000 ft., *Scortechini* 279!

17. *SONERILA REPENS*, Stapf and King. A herb with a long creeping rhizome and a very short succulent stem bearing 2–3 usually much approximated pairs of leaves, with few, whitish, more or less adpressed, papilliform hairs on both sides of the leaves and with very few, minute, gland-tipped hairs on the stems, petioles and inflorescences, or glabrous with the exception of the leaves. *Leaves* of a pair similar in shape,

equal or, more usually, very unequal in size, ovate, rarely oblong, acutely acuminate, cordate, rounded or rarely subacute at the base, rather symmetrical, entire or slightly wavy and denticulate, thinly membranous, dark- or pale-green, the larger 3-7 in. by 2-4.5 in., distinctly 7-nerved from the very base, with somewhat distant transverse veins; petioles 1-2.5 in. long, slender or stout, fleshy. *Cymes* long-peduncled, often many-flowered, solitary or usually 2-4 on a common subterminal peduncle from the leaf axils or close to the top; peduncle 2-5 in. long, first slender, at length rather stout, pedicels slender, .1-1.2 in. long. *Calyx* slender, obconical-campanulate, .2 to .23 in. long; teeth triangular. *Petals* elliptic, acute, .2-2.5 in. long, white or greenish white. *Anthers* slender, acuminate, .23-2.7 in. long. *Style* filiform; stigma punctiform. *Fruit* trigonous, obconical with straight sides, .22-.3 in. long, smooth; valves .15-1.6 in. long.

PERAK; 2000-4000 ft., common, *Curtis* 2015! *Scortechini* 1911! Maxwell's Hill, *Scortechini* 18/a! *Ridley*! Larut, on rocks in dense jungle, 2000 ft., *Kunstler* 2005! in open jungle on hill sides, 500-800 ft., *King's Collector* 5152! Kinta, *Curtis*! MALACCA; Bujong, 3000 ft., *Curtis*!

18. *SONERILA MUSCICOLA*, Stapf and King. A flaccid, ascending, unbranched herb, 4-6 in. high, with a creeping rhizome, with pale, fine, curved or curled hairs in the upper part of the stem and the leaves, and with scanty, gland-tipped hairs on the pedicels, calyx and on the back of the petals. *Stem* slender, weak, quadrangular. *Leaves* of a pair similar in shape and size, oblong to lanceolate-oblong, subacute or subacuminate at both ends, symmetrical or almost so, minutely toothed or almost entire, thinly membranous, pale-green, 2-3.7 in. by .8-1.4 in., pinnate-nerved, nerves 3-4 on each side, fine, very oblique; petiole .3-.8 in. long. *Cymes* few-flowered, terminal, peduncled, umbelliform, peduncles very slender, 1-1.5 in. long; pedicels very slender, .08-1.2 in. long. *Calyx* slender, obconical-campanulate, .2 in. long; teeth triangular, broad. *Petals* elliptic, apiculate, .35-.4 in. long, pink, with a few gland-tipped hairs along the middle nerve beneath. *Anthers* very slender, acuminate, tips curved, .22-.24 in. long. *Style* filiform; stigma punctiform. *Fruit* trigonous, truncate-obovoid, .2 in. long, smooth; valves .12 in. broad.

KEDAH; Gunong Raya, on mossy trees, *Curtis* 2573!

19. *SONERILA SAXOSA*, Stapf and King. An erect, delicate herb, 2-4 in. high, scantily hairy with the exception of the glabrous flowers, hairs pale, flexuous with long, fine tips; with a slender, creeping rhizome. *Stem* very slender, quadrangular. *Leaves* in 3-4 pairs (of which the upper are rather close), those of a pair similar in shape and size, oblong-lanceolate to lanceolate, acute at both ends, rather symmetrical,

finely toothed in the upper part or almost entire, membranous, green above, purplish beneath, .8-1.7 in. by .3-.6 in., 5-7-nerved from below the middle; petiole .2-.3 in. long. *Cymes* 4-7-flowered, much contracted, terminal; peduncles very slender, .5-1.5 in. long; pedicels very slender, .15 in. long, glabrous. *Calyx* very slender, linear-subcampanulate, .15 in. long, teeth broad, triangular. *Petals* elliptic, acuminate, cuspidate, .3-.35 in. long, pink. *Anthers* acuminate, .19 in. long. *Style* filiform, .3 in. long; stigma punctiform. *Fruit* obconical, truncate, sides almost straight, passing into the thickened pedicel, .25 in. long; valves .12-.15 in. broad.

PENANG; Government Hill, 2500 ft., on rocks in damp shady ravines; *Curtis*!

20. *SONERILA CONGESTA*, Stapf and King. An erect or suberect, rather delicate herb, 3-3.5 in. high, quite glabrous with the exception of an extremely scanty, furfuraceous, dark-rusty indumentum in the lower part; with a slender, creeping rhizome. *Stem* 1-1.5 in. long (exclusive of the peduncle), quadrangular. *Leaves* in about 3 crowded pairs, those of a pair similar in shape and size, broad, ovate to elliptic, obtuse or subobtuse, rounded or obscurely cordate at the base, rather symmetrical, subentire, thinly membranous, green, .9-1.7 in. by .6-1.2 in., 5-7-nerved from near the base, upper pair .4-.6 in. from the base; petiole slender, .6-.7 in. long. *Cymes* 4-9-flowered, contracted; peduncles slender, 1-2 in. long; pedicels slender, .12-.15 in. long. *Calyx* slender, subcampanulate-oblong, .15 in. long; teeth triangular, short. *Petals* elliptic-oblong, cuspidate-acuminate, .35 in. long, pink. *Anthers* acuminate, .15-.2 in. long. *Style* filiform, .25-.3 in. long; stigma punctiform. *Fruit* (semimature) obovoid-oblong, .15 in. long.

KEDAH; Gunong Chinchang, *Curtis* 2572!

21. *SONERILA GRIFFITHII*, C. B. Clarke in Hook. f. Fl. Brit. Ind. II, 539. An ascending, delicate herb, quite glabrous with the exception of the margins and sometimes the upper surface of the leaves; with a rather stout rhizome. *Stems* very slender, 2-3 in. long (exclusive of the panicle), rooting from the lower, soon leafless nodes, quadrangular. *Leaves* in 3-4, often crowded pairs, those of a pair similar in shape and size, broad, ovate to rotundate-elliptic, obtuse or subobtuse, obscurely cordate, rarely subobtuse at the base, rather symmetrical, toothed and ciliate on the margin, membranous, green, .4-8 in. by .4-.6 in., 5-nerved from near the base, upper pair .1 in. from the base; petioles slender, .3-.5 in. long. *Cymes* 2-3-flowered, much contracted, peduncles slender, 1-2.2 in. long; pedicels very slender, .1 in. long. *Calyx* slender, subcampanulate-oblong, .12 in. long; teeth triangular-ovate. *Petals* elliptic-oblong, cuspidate-acuminate, scarcely .25 in. long, pink. *Anthers* acuminate, .12-.15 in. long. *Style* filiform, not quite .25 in. long; stigma

punctiform. *Fruit* truncate, obovoid-oblong, cuneate at the base when quite ripe, .19-.23 in. long, obtusely trigonous. Cogn. in DC. Mon. VII, 513; Stapf in Ann. Bot. VI, 308.

MALACCA; Mt. Ophir, on dripping places, *Griffith* 2300! *Maingay* 2583! *Lobb* 182.

22. *SONERILA CYCLAMINELLA*, Stapf and King. A rather delicate, perfectly glabrous, almost acaulescent herb, with a creeping rhizome. *Stem* usually extremely short, quadrangular. *Leaves* in about 4 pairs, almost crowded into a rosette, those of a pair similar in shape and size, ovate to oblong-obtuse or subobtuse at both ends or subcordate at the base, rather symmetrical, undulate-crenulate or almost entire, membranous, light or dark brownish green above with silvery bands along the midrib and often also along the side, nerves more or less rich violet underneath, .8-1.4 in. by .4-.6, distinctly although finely 5-7-nerved below the middle, often with 1 or 2 delicate side-nerves higher up; petioles slender, .4-1 in. long. *Cymes* 2-5-flowered, very much contracted; peduncles slender, 2-5 in. long, pedicels slender, .08-1 in. long. *Calyx* slender, subcampanulate-oblong, .12-.15 in. long; teeth triangular, short. *Petals* elliptic, cuspidate-acuminate, scarcely .25 in. long, light pink. *Anthers* acuminate, .12 in. long. *Style* filiform, .25 in. long; stigma minutely subcapitate. *Fruit* truncate, obovoid, obtusely trigonous, .12-.16 in. long.

PERAK; on rocky hilltops, 800-1000 ft., *King's Collector* 10745! 10746! 10744 (in part)!

VAR. *canescens*, Stapf and King. Leaves more or less covered above with long, flexuous, white hairs; some of Ridley's specimens have leaves up to 3 in. by 1.2 in.

PERAK; with the type; *King's Collector* 10744 (in part)! SELANGORE; Bukit Kiuta, 3000 ft., on rocks, *Ridley* 7318!

23. *SONERILA HETEROSTEMONA*, Naud. in Ann. Sc. Nat. Ser. 3, XV, 326, t. XVIII, fig. 4. An erect or ascending, often branched herb, .5-2 ft. high, rarely quite dwarf, quite glabrous apart from an extremely fine, furfuraceous, rusty indumentum in the younger parts and, occasionally, a few scattered, short, whitish hairs on the upper surface of the leaves. *Stem* somewhat stout, quadrangular. *Leaves* of a pair similar in shape, but usually very unequal or one arrested at a very early stage or quite suppressed, rarely both more or less equal, usually conspicuously asymmetrical, obliquely ovate, subacute or shortly acuminate, rounded or shortly narrowed at the base, minutely toothed, membranous, metallic green, often spotted above, purplish beneath on the nerves, 1.5-4.5 in. by 1-2.3 in., 5-6-nerved from the very base with fine, lax, more or less horizontal transverse veins; petioles very unequal in length, .5-2 in. long. *Cymes* axillary and terminal, much contracted

and compact, very many-flowered, distinctly bracteate, at length 1-2.5 in. long, peduncle .6-1.2 in. long; bracts spathulate or obovate, very obtuse, up to .2 in. long, persistent; pedicels hardly any. *Calyx* short, obconical-oblong, .15-.16 in. long; teeth obscure, very obtuse. *Petals* elliptic, obtuse, pink, .15 in. long. *Stamens* 6, 3 slightly curved, purple, .15 in. long, 3 straight or almost so, yellow, .12-.15 in. long. *Fruit* subsessile, turbinate, .19-.23 in. long; valves .19 in. broad. *Miq.* Fl. Ind. Bat. I, 565; Triana in Trans. Linn. Soc. XXVIII, 77; C. B. Clarke in Hook. f. Fl. Brit. Ind. II, 540. *S. obliqua*, Cogn. in DC. Monogr. VII, 515; and Stapf in Ann. Bot. VI, 310 (in part), not of Korth.

PERAK; *Scortechini!* Ipoh, Curtis 3158! Changkal Serdang, Wray 783! Larut, *Scortechini* 54/a! Goping, *Kunstler* 787! Tapa, Wray 1308. MALACCA; *Griffith* 2302! 2294! *Maingay* 1223! (782, Kew Distr. partly), *Cuming* 2349! *Lobb* 183! in dense forest between Jassing and Ayer Bombon, *Maingay* 1425! (782, Kew Distrib. partly). MALACCA; Batang, *Holmberg* 876! Ulu Gujab, *Harvey!* (dwarf specimens). SINGAPORE; *Maingay* 3098! (782, Kew Distrib. partly); Bukit Timah, *Hullet* 893! PAHANG; Tahan, *Ridley!* (dwarf specimens). DISTRIB. Sumatra to Borneo.

24. *SONERILA INTEGRIFOLIA*, Stapf in Ann. of Bot. VI, 312. An erect or ascending, simple or branched herb, .5-1.3 ft. high, rufously strigose on the stem, the petioles, the nerves on the underside of the leaves and the inflorescence, including the calyx, but exclusive of the bracts, hairs of the leaves very tightly adpressed, like those of the inflorescence very short. *Stem* rather robust, often swollen at the nodes, subflexuous, almost woody below. *Leaves* very dissimilar, the larger of a pair asymmetrical, rarely symmetrical, usually obliquely oblong-lanceolate to obovate-oblong, distinctly (sometimes long) acuminate, minutely cordate or acute at the base, entire, sometimes with slightly wavy margins, somewhat fleshy, soft, quite glabrous above, dark- or yellowish-green, 3-5 in. by 1-1.5 in., sub-5-nerved from near the base with the lowermost pair of nerves faint, and the uppermost (in the narrow half) .2-1.2 in. above the base, with fine oblique transverse veins; small leaves minute, ovate to rotundate, often cordate, sessile or shortly petioled. *Cymes* terminal and apparently leaf-opposed, peduncled, bracteate, few- to many-flowered, very dense, up to 1 in. long, peduncles very short to .5 in. long; rhachis often flexuous when long; bracts oblong to linear-lanceolate, fleshy, up to .12 in. long, often much smaller, sometimes extremely numerous and crowded; pedicels very short or 0. *Calyx* oblong-campanulate, nearly .1 in. long; teeth triangular, up to .04 in. long, acute. *Petals* oblong, acute, .15 in. long, white to pink. *Anthers* oblong, obtuse, almost .1 in. long. *Style* .2 in.

long; stigma punctiform. *Fruit* semiglobose-turbinate, '12-18 in. long and wide, bullate-muricate.

PERAK; Larut, 200-800 ft., *Kunstler* 1917! 2791! Changkal Serdang, *Wray* 755! Blanda Mobok, *Wray* 3954! Maxwell's Hill, *Scortechini* 16a! *Hermitage*, *Curtis* 1302! SELANGOR; Dusun Tua, *Ridley* 7334! Kwala Tampan Caves, *Ridley* 306!

VAR. *acuminatissima*, Stapf and King. Leaves mostly very long and finely acuminate, on the whole narrower and less asymmetric than in the type, margins often slightly wavy to remotely serrulate, not rarely with a row of white spots close to them. *Petals* white.

PERAK; Larut, 1800-4000 ft., in dense old jungle, *Kunstler* 2004! 2161!

25. *SONERILA BRACTEATA*, Stapf and King. An erect or ascending, unbranched or very scantily branched herb, '5-1'5 ft. high, softly and densely hirsute to tomentose from rufous, flexuous or curved, more or less spreading, fine hairs in all parts with the exception of the upper side of the leaves which is glabrous apart from scattered, adpressed, pale bristles. *Stem* rather stout below with swollen nodes, subflexuous, leafy part 2 to over 6 in. long. *Leaves* very dissimilar, the larger of a pair shortly petioled, somewhat asymmetrical, oblanceolate, long and finely acuminate, unequally cordate at the base with a small rounded lobe on the outer, and a still smaller or obscure lobe on the inner side, entire, ciliate along the margin, membranous, light-green, 3-7 in. by 1-1'7 in., 5-nerved from near the base (the uppermost nerve '5-1'5 in. above the base), with oblique, transverse veins; petioles '2 to '4 in. long; small leaves reniform, very minute or up to '3 in. in diam. *Cymes* terminal and axillary, long-peduncled, very dense, subcapitate at first, at length to 1'5 in. long, multibracteate, many-flowered; peduncle rather slender, up to 2 in. long; bracts linear, membranous, ciliate, up to '12 in. long; pedicels very short. *Calyx* shortly oblong-campanulate, '07-'08 in. long; teeth lanceolate-triangular, about '04 in. long. *Petals* oblong, cuspidate-acuminate, white, '08 in. long, with a line of gland-tipped hairs on the back. *Anthers* short, oblong, obtuse, '06-'07 in. long. *Style* '15 in. long; stigma punctiform. *Fruit* shortly turbinate, '15 in. long and wide, densely muricate.

PERAK; Larut, in dense old jungle, 3200-3500 ft., *Kunstler* 2133! Maxwell's Hill, *Scortechini* 12!

26. *SONERILA CAPITATA*, Stapf and King. An ascending, unbranched or scantily branched herb, 3-12 in. high, rufously strigillose on the stem, the petioles and the nerves on the underside of the leaves, and also in the cymes, and with few or very few scattered, short hairs on the upperside of the leaves. *Stem* prostrate at the base, stout, succulent, swollen at the nodes, leafy part up to 7 in. long. *Leaves* very dissimilar,

the larger of a pair petioled, asymmetrical, obliquely obovate, elliptic or oblong, abruptly contracted into a narrow acumen, unequally cordate at the base with a small rounded lobe (to .2 in. long) on the broader side and gradually narrowed on the inner side, entire, membranous, light-green, 4-6 in. by 1.75-3 in., 5-8-nerved from near the base, with 2-5 nerves in the broad, and 2 in the narrow half, with oblique, on both sides distinctly raised, transverse veins; petiole stout, .5-1.5 in. long, small leaves orbicular-reniform, acute, cordate, sessile, up to .4 in. in diam. *Cymes* terminal and axillary, long-peduncled, capitate, very dense, bracteate, few- to many-flowered; peduncles rather slender, glabrescent in the upper part, bracts numerous, linear, up to .25 in. long; pedicels slender, .07-.09 in. long. *Calyx* oblong, densely shaggy from short hairs, thickened below, .07-.09 in., teeth narrow, triangular, .04 in. long. *Petals* oblong, acuminate, white or pinkish, .12 in. long, with a line of short, thick hairs on the back. *Anthers* short, oblong, obtuse, .1 in. long. *Style* filiform, .1 in. long, stigma punctiform. *Fruit* semiglobose, densely muricate, .15 in. long and wide.

PERAK; *Scortechini* 1886! Gunung Batu Pateh, in dense jungle, 3000-4000 ft. *Kunstler* 8075! 4500 ft. *Wray* 222!

27. *SONERILA CAESIA*, Stapf and King. An ascending or creeping, low herb, densely hairy on the stem, petioles and the nerves and veins on the underside of the leaves, less so in the inflorescence and with few or no hairs on the upperside of the leaves, hairs rufous, fine, straight and adpressed, particularly on the nerves, or more or less spreading on the petioles, coarse on the rhachis of the cyme and at the base of the umbels. *Stem* rather stout, prostrate below, leafy-part rarely more than .5 in. long. *Leaves* very dissimilar, the larger of a pair long-petioled, asymmetrical, obliquely elliptic, subacuminate or subobtuse, unequally cordate at the base with a large rounded lobe (.4-.6 in. long) on the outer, and a minute or quite obscure lobe on the inner side, entire or subentire, sometimes ciliate along the margin, somewhat fleshy, blue-green above, pale, green beneath with reddish nerves and veins, 3-5 in. by 1.75-2.75 in., 6-7-nerved from near the base, 3-4 nerves in the outer (larger), 2 nerves in the inner (narrow) half, with subhorizontal or oblique transverse veins; petiole 1-3.5 in. long; small leaves minute, ovate-cordate, shortly petioled, or suppressed. *Cymes* terminal and from the upper leaf-axils, usually 2-3 in peduncled umbels with small bracts at the base, bracteate, few- to very-many-flowered, very dense; common peduncle slender, 1-2.5 in. long; special peduncles .25-1 in. long; pedicels slender, .08-.1 long; bracts oblong, obtuse, as long as or shorter than the pedicels, glabrous, persistent. *Calyx* obconical-campanulate, .12 in. long, scabrid, crimson; teeth triangular, acute, distinct. *Petals* oblong, cuspidate-acuminate, .22 in. long, pale pink. *Anthers*

short, oblong, obtuse, .1 in. long. *Style* .25 in. long; stigma punctiform. *Fruit* semiglobose, .15 in. long and wide, tubercled, tubercles rounded.

PERAK; Gunong Batu Patch, 3,400 ft., *Wray* 1035! UPPER PERAK; 300 ft., *Wray* 3442! 3553!

28. *SONERILA NIDULARIA*, Stapf and King. An ascending, simple, rarely furcate herb, 3-8 in. high, densely rusty-tomentose on the stem, petioles and the nerves (rarely also between the nerves) on the underside of the leaves, pubescent in the inflorescence (including the calyx), otherwise glabrous; hairs fine, flexuous, short to very short and more or less adpressed or, in the upper part of the stem, sometimes longer and more or less spreading. *Stem* prostrate at the base, stout, straight or flexuous, rooting at the base, leafy part 1-5 in. long. *Leaves* very dissimilar, the larger of a pair shortly petioled, asymmetrical, obliquely oblong to obovate-oblong, subacuminate or subobtuse, unequally cordate at the base with a larger, rounded lobe (.12-.2 in. long) on the outer and a similar, but much smaller lobe on the inner side, entire, fleshy, rather firm, dark-green above, sometimes with a row of large white spots on each side of the midrib, 3-4.5 in. by 1-2 in., 5-nerved from near the base with oblique transverse veins, the outer nerve of the inner (narrow) side marginal and often indistinct; petiole stout, .15-.6 in. long; small leaves sessile, reniform or orbicular, cordate, .2 in. or less in diam. *Cymes* terminal and axillary, sessile, minutely or obscurely bracteate, few- to many-flowered, much contracted; pedicels very short at first, ultimately up to .3 in. long, and stout. *Calyx* campanulate-oblong, .12-.15 in. long; teeth triangular, acuminate, up to .06 in. long. *Petals* obovate-elliptic, cuspidate, almost .25 in. long. *Anthers* short, oblong, obtuse, .14 in. long. *Style* .25 in. long, stigma punctiform. *Fruit* shortly turbinate, subtrigonus, muricate, .25 in. long and wide.

PERAK; *Scortechini* 650! Larut, 1000-2000 ft., *Kunstler* 2345! on hills in open jungle, *King's Coll.* 5764! Gunong Haram (?), *Scortechini* 655! Waterloo, common, *Curtis*!

29. *SONERILA BRACHYANTHA*, Stapf and King. An ascending simple or scantily branched herb, 3-8 in. high, softly hirsute or shaggy all over, hairs dense and more or less spreading on the stem, the petioles and all parts of the inflorescence (inclusive of the calyx), looser on both sides of the blades, reddish, rather long and flexuous. *Stem* rather stout, subflexuous, leafy part 1-3 in. long, branches, if any, spreading, resembling the main stem. *Leaves* very dissimilar, the larger of a pair petioled or subsessile, more or less asymmetrical, obliquely ovate-lanceolate to oblong-lanceolate, acuminate, unequally cordate at the base with a rounded lobe (.15-.25 in. long) on the outer and a minute lobe on the inner side, entire, membranous, dark brownish-green above, reddish or

deep-red or violet beneath, 2-4 in. by 1-1.5 in., 5-nerved from near the base, with 3 side-nerves in the broad and 2 side-nerves in the narrow half, uppermost side-nerves sometimes .4-.5 in. above the base, with indistinct oblique transverse veins; petioles usually short or very short, rarely up to .5 in. long; small leaves ovate-cordate, acute or reniform, .15 in. long and broad, on slender, short petioles. *Cymes* terminal and axillary, solitary or in fascicles of 2-3, subsessile, indistinctly bracteate, few- to many-flowered, very dense; peduncles very short, slender, with 2 petioled small leaflets at the base; rhachis shaggy, bracts finely filiform, ciliate, hidden among the hairs of the rhachis; pedicels very slender, about .1 in. long. *Calyx* campanulate-oblong, .12-.15 in. long, shaggy; teeth triangular-lanceolate, .07 in. long. *Petals* oblong, subacute, suberect, over .25 in. long, pinkish white or pink, with a line of hairs on the back. *Anthers* short, oblong, obtuse, .1 in. long. *Style* over .25 in. long; stigma punctiform. *Fruit* semiglobose-turbinate, muricate, .2 in. long and wide.

PERAK; *Scortechini* 1873! 1875! Goping, in dense jungle, *Kunstler* 434! 440! Larut, in dense jungle, 500-800 ft., *King's Collector* 5752! MALACCA; Kinta Gunong, 1000-1500 ft., on rocky places, *King's Collector* 7179! Gunong Inas, 5000 ft., *Wray* 4088.

30. *SONERILA MICROCARPA*, Stapf and King. An ascending herb, 3-6 in. high, rusty-tomentose on the stem, petioles and the underside of the leaves, more coarsely hairy in the inflorescence (including the calyces) from short, somewhat stiff and spreading, or soft and more adpressed (underside of the leaves) hairs, and besides with scattered, longer and stouter, flexuous hairs on the upper side of the leaves. *Stem* long, prostrate at the base, somewhat stout, straight or subflexuous, leafy part 2-4 in. long. *Leaves* very dissimilar, the larger of a pair shortly petioled, asymmetrical, obliquely obovate-lanceolate or oblanceolate, abruptly acuminate, unequally cordate at the base with a larger rounded lobe (.1-.2 in. long) on the outer, and a similar, but very minute or obscure lobe on the inner side, subentire or entire or obtusely serrulate, fleshy, rather firm, dark-green above, sometimes with numerous small white spots, 2.5-4 in. by 1-1.5 in., 4-5-nerved from near the base with oblique transverse veins, petiole .15-.4 in. long; the small leaves sessile, reniform or orbicular, cordate, .2 in. diam. *Cymes* terminal and from the upper axils, subsessile or shortly peduncled, ebracteate, few- to many-flowered, rather lax; peduncle very slender, if any, up to .5 in. long; pedicels filiform, up to .25 in. long. *Calyx* campanulate-ovoid, .12 in. by .08 in.; teeth triangular. *Petals* oblong, acute, almost .25 in. long, like the calyx pink. *Anthers* short, oblong, obtuse, .08-.1 in. long. *Style* .25 in. long; stigma punctiform. *Fruit* pale pink, subtrigonal, turbinate, minutely muricate, .08-.11 in. long, .15 in. broad.

PERAK; *Scortechini*! Upper Perak, 300 ft., *Wray* 3445! 3446! 3621!

31. *SONERILA COSTULATA*, Stapf and King. An ascending, unbranched herb, a few inches high, densely hirsute or tomentose on the stem, the petioles and more or less also in the inflorescence, including the calyx; adpressedly strigillose on the nerves and veins on the underside of the leaves, and with scattered, often very few, stouter hairs on the upper side of the leaves, hairs rufous, those of the stem, petioles and inflorescence flexuous, more or less spreading. *Stem* prostrate below, subflexuous, leafy part rarely more than 1 in. long. *Leaves* crowded, the larger of a pair petioled, more or less asymmetrical or the upper sometimes almost symmetrical, obliquely (if asymmetrical) obovate-oblong or oblong, subacuminate, unequally cordate at the base with a rounded lobe (.2 in. long) on the larger and a minute lobe on the narrower half, entire, ciliolate along the margin, membranous, dark green, 3-6 in. by 1.3-2.5 in., 6- or rarely 7-nerved from near the base with 3 (rarely 4) nerves in the broad and 2 in the narrow half, with oblique, conspicuously prominent, transverse veins on both sides; petiole stout, .3-5 in. long; small leaves ovate-cordate to reniform, minute or up to .33 in. long, on short petioles. *Cymes* terminal and in the upper axils, solitary or 2 on a common very short peduncle, ebracteate, few- or many-flowered, contracted; rhachis very slender; peduncles very short; pedicels slender, .08-12 in. long. *Flowers* unknown. *Fruit* semiglobose-turbinate, muricate, .15-.18 in. long and wide.

PERAK (?); foot of Gunong Panti, *Kunstler* 220!

Rather closely allied to *S. Beccariana*, Cogn.; but this has on the whole narrower, more acuminate leaves and much larger fruits.

32. *SONERILA MACROPHYLLA*, Stapf and King. An ascending simple herb, 3-5 in. high, softly hirsute or shaggy all over; hairs dense and more or less spreading on the stem, the petioles and all parts of the inflorescence (inclusive of the calyx), looser on both sides of the leaves, pale reddish, rather long and flexuous. *Stem* prostrate below. *Leaves* very dissimilar, the larger of a pair petioled, asymmetrical, obliquely elliptic, acuminate, unequally cordate at the base with a large, rounded lobe (.4 in. long) on the outer and a much smaller lobe on the inner side, entire or subentire, membranous, on both sides light-brown when dry, 4-6 in. by 2.2-3 in., about 7-nerved from near the base, with 4 nerves in the broad, 2 in the narrow half and with usually indistinct, fine, oblique, transverse veins, uppermost side-nerve 1-1.25 in. above the base; petiole stout, .5-1.2 in. long; small leaves ovate-cordate to reniform, up to .25 in. long, on short, slender petioles. *Cymes* terminal and in the upper axils, solitary or 2 or a common short peduncle, ebracteate, rather many-flowered, apparently very dense owing to the long interwoven

hairs; rachis slender; common peduncle very short to .7 in. long, slender, with a pair of spatulate-lanceolate, petioled leaflets at the point of branching; special peduncles very short; pedicels very slender, up to .15 in. long. *Calyx* campanulate-oblong, about .14 in. long, very shaggy; teeth triangular-lanceolate, up to .06 in. long. *Petals* oblong, acute, suberect, .3-.35 in. long; stigma punctiform. *Fruit* semiglobose-turbinate, muricate, about .2 in. long and wide.

PERAK; *Scortechini*!

VAR. *lavipilosa*, Stapf and King. All parts loosely hairy with the hairs as in the type. *Leaves* up to 6 in. by 3.5 in., rather thinner. Common and special peduncles short or up to 3 in. long (together).

PERAK; Ipoh, Kinta, *Curtis* 3154! Pulau Butong, *Curtis*!

33. *SONERILA PARADOXA*, Naud. in Ann. Sc. Nat. Ser. 3, XV, 321. A low, creeping herb, softly hirsute or shaggy all over; hairs dense and more or less spreading on the stem, petioles and all parts of the inflorescence (including the calyx), looser on both sides of the blades, reddish, rather long and flexuous. *Stem* creeping, slender to rather stout, rooting, the leaf-bearing, terminal part rising rarely more than .5 in. above the ground. *Leaves* crowded, very dissimilar, the larger of a pair petioled, asymmetrical, obliquely oblong or elliptic, shortly acuminate, unequally cordate at the base, with a large rounded lobe (.25-.5 in. long) on the outer and a similar but much smaller lobe on the inner side, entire or subentire, membranous, soft, light-green, 3-6 in. by 1.2-2.5 in., 6-8 nerved from near the base (3-5 nerves in the broader half), with oblique curved transverse veins; petiole .4-2 in. long or the uppermost very short; small leaves rotundate-ovate or reniform, cordate, .08-.4 in. in diam., on very slender petioles (.08-.6 in. long). *Cymes* terminal and from the upper axils, solitary with a pair of small petioled leaflets at the middle of the peduncle, or in umbels of 2-4, ebracteate or inconspicuously bracteate, few- to many-flowered, dense; common peduncle slender, usually 1-2 in. long; special peduncles much shorter; rhachis very shaggy; bracts linear to filiform, ciliate, short, usually hidden among the hairs of the rhachis or suppressed; pedicels .08-.1 in. long, very slender. *Calyx* campanulate-oblong, about .15 in. long, shaggy; teeth short, triangular. *Petals* oblong, acute, suberect, over .25 in. long, white. *Anthers* oblong, obtuse, .1 in. long. *Style* over .3 in. long; stigma punctiform. *Fruit* semiglobose-turbinate, .12-.15 in. long, .18 in. wide, muricate-tuberculate. *S. moluccana*, Jack. Misc. I, 8; Wall. Cat. 4089; Benn. Pl. Jav. Rar. 215, (p.p.); Blume, Mus. I, 10 (p.p.); Miq. Fl. Ind. Bat. I, 562 (p.p.); C. B. Clarke in Hook. f. Fl. Brit. Ind. II, 537 (p.p.); Triana in Trans. Linn. Soc. XXVIII, 77; Cogn. in DC. Monogr. VII, 508 (p.p.); Stapf in Ann. Bot. VI, 311, 312 (p.p.); and Roxb. Flor. Ind. I, 178?

ERRATUM.

Last line of page 40, *for* "and" *read* "an."

PENANG; Wallich Cat. 4089! Griffith 2298! Maingay 780 (Kew Distrib.) in shady, damp places, 1500–3000 ft., Stoliczka, Hullet 196! King's Coll. 1284! Pulloh Bahang, Curtis 411! SINGAPORE (?); Lobb 325!

Roxburgh says of his *S. moluccana*, "Habitat in insulis Moluccanis." His description is extremely short and insufficient, and there does not seem to have been a specimen in his herbarium nor was it figured by him. It is very improbable that the plant he described was identical with the Penang plant, if he received it really from the Moluccas, as the distribution of most species of the section *Hexadon* is very local, and no specimens, referable to *S. paradoxa*, have been discovered, so far, east of the Malay Peninsula. On the other hand, it is possible that Roxburgh meant *S. malaccana* instead of "*S. moluccana*" and *insulis malaccanis* for "*ins. moluccanis*," as the editors of his *Flora Indica* put it. There is at least nothing in his description which would contradict the assumption that his brief diagnosis was drawn up from the Penang plant. In view of this uncertainty we have preferred to follow Naudin and to consider Roxburgh's *S. moluccana* as a "species dubia" and adopt Naudin's name for the Penang plant.

34. *SONERILA BEGONIAEFOLIA*, Blume in *Flora* (1831), 490. An ascending, usually unbranched herb, 2–6 in. high, moderately hairy with the exception of the often glabrous upper side of the leaves; hairs of the stem, petioles and the inflorescence rufous, flexuous, more or less spreading, of the leaves confined to the nerves and veins of the under-side, often scanty, very short. *Stem* rather slender, rooting below. *Leaves* very dissimilar, the larger of each pair petioled, more or less asymmetrical, obliquely elliptic, subacuminate, unequally cordate at the base with a rounded lobe (2–3 in. long) on the outer and a much smaller on the inner side, entire or more or less obtusely serrulate, ciliolate, membranous, dark-green above, pale brown (when dry) beneath, 3–4 in. by 1.7–2.3 in., 6- sub-7-nerved from near the base (with 3–4 nerves in the broader half), with usually very conspicuous subhorizontal transverse veins; petiole .4–1.2 in. long; small leaves ovate to rotundate, acute, cordate, very small, distinctly petioled. *Cymes* terminal and axillary, peduncled, dense, at length up to .8 in. long, deciduously bracteate; peduncle slender, up to 1.5 in. long; bracts linear-oblong, ciliolate, up to .1 in. long, deciduous; pedicels .07–.1 in. long. *Calyx* campanulate-oblong, teeth broad, triangular. *Petals* ovate, acute. *Anthers* short, oblong, obtuse. *Fruit* shortly turbinate, .18–.22 in. long and wide, muricate-tuberculate, tubercles rather coarse, acute, mostly passing into short fine bristles. Korth. in *Verh. Nat. Gesch. Bot.* 248, t. 54; Naudin in *Ann. Sc. Nat. Ser. 3, XV*, 322; Triana in *Trans. Linn. Soc. XXVIII*, (1873), 77. *S. moluccana*, Benn. *Pl. Jav.*, *Rar.* 215; Miq. *Fl. Ind. Bat. I*, 562; C. B. Clarke in *Fl. Brit. Ind. I*, 562; Cogn. in *DC. Monogr. VII*, 508; Stapf in *Ann. Bot. VI*, 312 (all references under *S. moluccana*, p.p.).

SINGAPORE; Bukit Tunat, *Ridley* 2005! Chanchukang, *Ridley* 422!
 Bukit Mandu, *Ridley* 2005/a! JOHORE; Gunong Panti, *Ridley* 4199!
 DISTRIB. Sumatra, Java, South Borneo.

There being no flowers with the specimens enumerated, they have been described from Korthals, l.c. The Sumatra specimens have leaves which are more or less hairy or bristly on the upper side and represent Blume's VAR. *pilosiuscula* of *S. begoniaefolia* (Blume, Mus. I. 11) or *S. moluccana* VAR. *pilosiuscula* Stapf, l.c. A specimen from South Borneo, collected by Motley, is almost glabrous on the upperside of the leaves.

35. *SONERILA GLABRIFLORA*, Stapf and King. A creeping or ascending herb, a few inches high, with a long creeping rhizome, hairy on the stem, peduncles, petioles and the nerves on the underside of the leaves, otherwise glabrous; hairs reddish, straight, adpressed. *Stem* rather stout, slightly swollen at the nodes, frequently rooting, leafy part 1-4 in. long. *Leaves* very dissimilar, the larger of each pair petioled, asymmetric, obliquely elliptic, obtuse or subacute, unequally cordate at the base with a large, rounded lobe on the outer and small or obscure one on the inner side, entire or obscurely and remotely toothed, fleshy, soft, dark glossy-green above, pale with purple nerves beneath, 3-6 in. by 2-3.5 in., with 3-5 lateral nerves in the outer and 2-3 in the inner half near the base and with rather lax subhorizontal transverse veins; petiole rather stout, 1-2.5 in. long, the small leaves sessile, reniform-cordate, .2-2.5 in. in diam. *Cymes* terminal and axillary, usually 2- or 3-nate on a common peduncle, ebracteate, many-flowered, rather dense or glabrous, when ripe up to 1.3 in. long, common peduncle 1-2 in., special peduncles .5-1.2 in. long, slender; pedicels very slender, .1-1.2 in. long. *Calyx* campanulate-ovoid, .12-.15 in. by .06 in.; teeth very broad and short. *Petals* elliptic, acute, almost .25 in. long, white or tinged with pink. *Anthers* linear-oblong, obtuse, .12 in. long. *Style* .15 in. long; stigma punctiform. *Fruit* subtrigonal, hemispherical, quite smooth, .15-.16 in. long and wide; valves in the depressed centre of the capsule 6, delicately membranous, fragile.

PERAK; Larut, in wet jungles, up to 100 ft., *Kunstler* 1955! 2128!

36. *SONERILA ELATOSTEMOIDES*, Stapf and King. An erect, ascending or creeping, unbranched or scantily branched herb, up to 6 in. high, softly tomentose in all parts, hairs rusty coloured, short, spreading and very dense on the stem and petioles, somewhat laxer in the inflorescence inclusive of the calyx, pale and longer on the leaves. *Stem* slender, subflexuous. *Leaves* very dissimilar, the larger of each pair petioled, asymmetrical, obliquely oblong-elliptic or obovate, acuminate, unequally cordate at the base with the outer lobe broad, rounded, up to .2 in. long and the inner similar but much smaller, entire, membranous, green

above, whitish green below, 2·2–2·8 in. by 1–1·2 in., 6–7-nerved from near the base (with 3–4 lateral nerves in the broad and 2 in the narrow half) with oblique transverse veins, nerves and veins not very distinct; petiole ·18–·4 in. long; small leaves reniform-cordate, subsessile, ·15 in. in diam. *Cymes* terminal and axillary, long peduncled, few-flowered, not very dense, ebracteate; peduncle slender, ·6–1 in. long; pedicels slender, ·02 in. long. *Calyx* oblong-campanulate, ·08 in. long, teeth short. *Petals* oblong, acute, ·18 in. long, with a line of hairs on the back. *Anthers* short, oblong, obtuse, ·09 in. long. *Style* ·2 in. long; stigma punctiform. *Fruit* semiglobose, muricate, ·12 in. long and wide.

PERAK; Gunong Bubu, *Wray* 3825!

37. *SONERILA BICOLOR*, Stapf and King. An ascending or suberect, nearly always unbranched herb, 3–9 in. high, softly hairy all over, hairs pale, straight, fine, spreading except on the upper side of the leaves, very dense in the upper part of the stem, on the petioles and in the inflorescence inclusive of the calyx. *Stem* rather slender, subflexuous, slightly swollen at the nodes. *Leaves* very dissimilar, the larger of each pair more or less asymmetrical, shortly petioled, obliquely oblong to lanceolate-oblong, distinctly acuminate, unequally cordate at the base with a rounded lobe (to ·4 in. long) on the outer, and a minute or obscure lobe on the inner side, ciliate along the margin, membranous, soft, dark green or magenta-red above with a light green band along the midrib, purple beneath, 3–6 in. by 1–1·5 in., finely 5-nerved from near the base (uppermost nerve from ·4–·6 in. above the base, with faint oblique transverse veins; petiole ·2–·6 in. long; small leaves ovate to rotundate, cordate, shortly petioled, very small to ·4 in. long. *Cymes* terminal and axillary, peduncled, loosely few- to 10-flowered, ebracteate; peduncle slender, ·4–1·2 in. long; pedicels ·1–·2 in. long, slender, also when mature. *Calyx* oblong-sub-campanulate, ·12 in. long; teeth triangular, short. *Petals* elliptic-oblong, acute, ·35 in. long, pink. *Anthers* linear-oblong, subobtuse, ·12 in. long. *Style* ·35 in. long; stigma punctiform. *Fruit* semiglobose, ·12–15 in. long and wide, muricate, opening with 6 thinly membranous teeth in the depressed centre or with 3, 2-toothed valves.

PERAK; Ulu Salama, 500 ft., *Wray* 4159! Larut, in dense jungle, 500–800 ft., *King's Coll.* 5794! Tapa, *Baldwin*!

38. *SONERILA CALYCUOLA*, Stapf and King. An ascending or creeping herb, about 6 in. long, rusty tomentose on the stem, petioles and peduncles, and pubescent on the nerves on the underside of the leaves, otherwise glabrous; hairs short, curled or flexuous, loosely adpressed. *Stem* rather stout, straight, rooting in the lower part, leafy part about 4 in.

long. *Leaves* very dissimilar, the larger of each pair petioled, symmetrical, or almost so, lanceolate, gradually tapering towards both ends, entire, somewhat fleshy, pale-brown on both sides when dry, 3·5–5·5 in. by ·8–1·25 in., 5-nerved from the base (the outer nerves faint, submarginal) with faint oblique transverse veins; petiole ·35–·4 in. long; small leaves reniform, cordate, very minute, ·05 in. in diam., or suppressed. *Cymes* terminal and from the upper axils, peduncled, few-flowered; peduncle filiform, ·4–·5 in. long; pedicels fine, not spongy when mature, ·1–·12 in. long. *Flower* unknown. *Fruit* semiglobose, smooth, ·08–·1 in. by ·12 in., crowned by the ultimately deciduous calyx-margin the teeth of which are very broadly triangular and cuspidate.

PAHANG; Tahan River, *Ridley* 2237!

9. PHYLLAGATHIS, Blume.

Herbaceous small shrubs with very short stems. *Leaves* opposite (or the terminal leaf solitary), large, petioled, orbicular, or sub-orbicular, 7–9-nerved. *Flowers* in a peduncled dense head, purple. *Calyx-tube* campanulate, glabrous or with long bristles near the top, teeth 4 (rarely 3), acute, long-setose. *Petals* 4 (rarely 3), ovate, acute, glabrous. *Stamens* 8 (rarely 6), equal; anthers elongate, scarcely produced at the base, connective without appendage. *Ovary* adnate to the bottom of the calyx-tube, 4- (rarely 3-) celled, glabrous at the apex; style filiform; ovules very numerous, placentas large axile. *Capsule* broadly funnel-shaped, opening by 4 valves at the top. *Seeds* ellipsoid, somewhat obovoid, with glandular, hardly raised dots; raphe slightly excurrent along one side of the seed its whole length.—DISTRIB. Species 5; all Malayan.

- | | |
|--|-----------------------------|
| Leaves oblanceolate | 1. <i>P. tuberculata</i> . |
| Leaves more or less orbicular; peduncles of inflorescence many inches long and as long as or longer than the long petioles:— | |
| Flowers in narrow, shortly branched panicles ... | 2. <i>P. Griffithii</i> . |
| Flowers in terminal solitary ebracteate umbels:— | |
| Peduncles glabrous | 3. <i>P. Scortechinii</i> . |
| Peduncles hispid | 4. <i>P. hispida</i> . |
| Flowers in bracteate umbels with peduncles 1 or 2 inches long | 5. <i>P. rotundifolia</i> . |

1. PHYLLAGATHIS TUBERCLATA, King, n. sp. *Stem* short, woody, erect, covered with small warts. *Leaves* two or three, membranous, oblanceolate, shortly acuminate, very gradually narrowed to the short hispid petiole, 7- to 9-nerved; upper surface glabrous except for a few

scattered stout bristles; lower surface coarsely strigose on the nerves, otherwise glabrous, the reticulations fine; length 10 to 16 in., breadth 3 to 6 in., petiole 0 to 1.5 in. *Peduncles* much shorter than the leaves, solitary or several from one axil, sparsely glandular-hairy, bearing at their apices a solitary, lax, involucrate, compound umbel; involucre oblong, obtuse, glabrous, .5 in. in length or shorter, those of the umbellules smaller; pedicels shorter than the calyx-tube. *Flowers* nearly .75 in. long. *Calyx-tube* rather widely cylindric, bearing (especially towards its base) numerous flat, shortly stalked, fleshy discoid glands; the teeth 4, short, shallow, wide, each crowned by a stalked gland. *Petals* longer than the calyx, oblong, much acuminate (forming a narrow cone in bud). *Stamens* 8; the filaments about one-fourth as long as the linear acuminate anthers. *Ovary* short, broad, truncate, deeply grooved and almost winged; style long, flattened, smooth. *Capsule* .3 in. in diam.

PERAK; *Scortechini* 1872. *King's Collector* 7233.

At once recognisable by the curiously glandular calyx.

2. *PHYLLAGATHIS GRIFFITHII*, King. A shrub with a very short stem and usually only a single pair of unequal leaves. *Leaves* coriaceous, sub-rotund, 7-nerved, apex obtuse, the base cordate, edges quite entire; both surfaces glabrous, the lower lepidote and slightly puberulous on the nerves; length 5 to 8 in., breadth 3.5 to 6.5 in., petiole 4 to 8 in. *Panicle* axillary, nearly as long as the leaves, bearing in its upper half a few very short few-flowered branches, the whole lepidote especially towards the apex. *Flowers* corymbose, on scaberrulous pedicels, as long as the narrowly campanulate glandular-hairy calyx-tube: mouth of calyx truncate, slightly expanded, and minutely 4-toothed. *Petals* 4, quadrate. *Stamens* much exserted: *anthers* not so long as the glabrous filaments, narrow acuminate, much sagittate at the base, inappendiculate. *Allomorpha Griffithii*, Hook. MSS. Fl. Br. Ind. II, 527. Triana in Trans. Linn. Soc. XXVIII, 74, t. VI, fig. 66c; Cogn. in DC. Mon. Phan. VII, 467.

MALACCA: *Griffith* (K.D.) 2264/1. *Maingay* (K.D.) 775; *Hullett*. PERAK; *Scortechini* 170; *King's Collector* 694. SELANGORE; *Curtis* 2333! *Ridley* 7317. PENANG; *Stolickza*.

I have removed this from *Allomorpha* to *Phyllagathis* of which it has the flowers and habit.

3. *PHYLLAGATHIS SCORTECHINII*, King, n. sp. *Stem* woody below, shortly creeping above and subterete. *Leaves* on very long petioles, coriaceous, reniform-rotund, cordate, the apex minutely apiculate, stoutly 9-nerved; the transverse veins bold, glabrous on the upper surface, glandular-puberulous on the lower; length 5 to 10 in.; breadth

5 to 9 in.; petiole 4 to 9 in., stout. *Peduncles* solitary, longer and more slender than the petioles, bearing at the apex a single dense, ebracteate umbel. *Flowers* nearly .5 in. long to the apices of the stamens, their pedicels .25 in. long. *Calyx-tube* narrowly campanulate, not ribbed, glabrous, very minutely lepidote; the teeth 4, broad, rounded, shallow. *Petals* rotund-ovate, blunt, short. *Stamens* 8; the filaments about half as long as the linear acute anthers. *Ovary* grooved, short, broad; style as long as the anthers, cylindric, glabrous. *Capsule* about .2 in. in diam., truncate, the valves broad, truncate.

PERAK; *Scortechini* 269; *King's Collector* 4287. SELANGORE; *Ridley* 7317.

This species is closely allied to *P. Griffithii* but differs notably in its solitary terminal umbels.

4. *PHYLLAGATHIS HISPIDA*, King, n. sp. *Stem* very short, woody, hispid. *Leaves* 2 or 3, sub-coriaceous, on long petioles, broadly ovate, cordate at the base, the apex abruptly and shortly acuminate, the edges with minute, sharp, sometimes unequal teeth, 7- to 11-nerved, the transverse nerves strong: upper surface glabrous, the lower uniformly covered with minute, scurfy pubescence, the main nerves with a few long, spreading, stout bristles; petiole densely shaggy near the base, more sparsely hispid upwards: length 5 to 10 in., breadth 3 to 7 in.; petioles varying from 4 to 12 in. *Peduncle* axillary, shorter than the leaves and more slender than the petioles, sparsely hispid; the umbel few-flowered, ebracteate. *Flowers* .75 in. long; their pedicels slender, hispid, longer than the calyx. *Calyx-tube* narrowly cylindric or cylindric-campanulate, nearly glabrous, or sparsely hispid; the mouth with 4 broad, shallow, blunt teeth. *Petals* broadly ovate, acute. *Stamens* 8; *anthers* not much longer than the filaments, broadly lobed and cordate at the base, and the connective with a short, narrowly cylindric basal protuberance behind. *Ovary* very short; *style* filiform. *Capsule* .2 in. across.

PERAK; *Scortechini*! *Wray* 1021, 1602, 3519. PAHANG; *Ridley* 2236.

5. *PHYLLAGATHIS ROTUNDIFOLIA*, Blume in *Flora*, 1831, 507. *Stem* creeping, obtusely 4-angled. *Leaves* unequal in the pairs, rotund or rotund-ovate and shortly apiculate; both surfaces, but especially the lower, minutely lepidote; main nerves 7 to 9, curved, radiating from the base, the transverse nerves bold, curved; petioles unequal, from .85 to 3.5 in. long, their interior surfaces covered with coarse black bristles; length 2 to 8 in.; breadth 1.5 to 6 in. *Inflorescence* 4- to 30-flowered; the involucre orbicular-ovate acuminate. *Calyx-tube* ribbed, minutely lepidote; the teeth triangular, broad at the base but with

elongate narrow apices bearing 2 or 3 bristles; filaments from one-fourth to one-half of the length of the linear stamens. *Ovary* 4-angled, the apex with a truncate cartilaginous rim. Korth. in Verh. Nat. Gesch. Bot. 252, t. 57; Naud. in Ann. Sc. Nat. Ser. 3, XXV, 332; Bot. Mag. t. 5282; Miq. Fl. Ind. Bat. I, 559; Triana Melast., tab. VI, fig. 73; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 541; Cogn. in DC. Mon. Phan. VII, 518. *Melastoma rotundifolia*, Jack in Trans. Linn. Soc. XIV, 11; DC. Prodr. III, 149.

MALACCA; *Griffith, Maingay.* SELANGORE; *Ridley 7327.* PERAK; *Scortechini, King's Collector, Wray.* DISTRIB. Burma, Sumatra, Java; common.

Rather variable as to size of leaves and as to the number of bristles on their petioles. The teeth of the calyx also vary as to the length of the acuminate apex and as to the number of bristles.

10. MARUMIA, Blume.

Twining shrubs; branches cylindric, thickened at the nodes. *Leaves* opposite, short-petioled, coriaceous, cordate at the base, 3-nerved from the base besides two submarginal nerves, entire, stellate-tomentose beneath. *Cymes* axillary; flowers 3-5, large, pedicelled, purple or white. *Calyx-tube* narrowly campanulate, tomentose (and often bristly or stellate-hairy); lobes 4, deep, persistent. *Petals* 4, obovate. *Stamens* 8, unequal; anthers elongate, opening by a single pore; connective of the longer anthers carrying in front two long bristles and behind often one or two spurs or several twisted bristles. *Ovary* at the base (or half its height) adnate to the calyx, 4-celled, densely hairy at the apex; style filiform; ovules numerous, placentas axile. *Berry* ellipsoid, crowned by the calyx-limb. *Seeds* numerous, oblong-ellipsoid, with glandular scarcely raised dots, raphe slightly excurrent along the whole length of one side.—DISTRIB. Species 10, Malaya, Borneo and the Philippines.

Calyx-tube without bristles	...	..	...	1. <i>M. nemorosa.</i>
Calyx-tube very bristly:—				
Teeth of limb of calyx half as long as the tube, oblong, acute: upper surface of leaves not reticulate	...	...	...	2. <i>M. rhodocarpa.</i>
Teeth of limb of calyx one-fourth as long as the tube or less, broadly triangular, blunt; upper surface of leaves much reticulate	...	...	...	3. <i>M. reticulata.</i>

1. MARUMIA NEMOROSA, Blume in Flora XIV, (1831), 505. A straggling climber; all parts except the upper surfaces of the leaves, the petals, stamens and ovaries covered with dense rufous or pale stellate

tomentum, without bristles; the branches thickened and annulate at the nodes. *Leaves* sub-coriaceous, elliptic or oblong-lanceolate, slightly cordate at the base, the apex shortly acuminate or acute, 5-nerved (the lateral pair of nerves faint); upper surface glabrous; length 3 to 6 in.; breadth 1·35 to 2·75 in.; petiole ·2 to ·4 in. long. *Flowers* about 1·75 in. long (including the stamens), solitary or in pedunculate cymes of three from the axils of the leaves. *Calyx-tube* more or less narrowly campanulate, somewhat constricted below the limb; limb with 4 deep, triangular teeth. *Petals* broadly ovate, blunt, longer than the calyx-tube, rose-coloured. *Stamens* 8, unequal; the anthers of all linear, curved; the longer with two narrow, curved filaments at the base in front, and several smaller behind; the four smaller with two smaller, equal filaments at the base in front only. *Fruit* succulent, oblong-ovoid, constricted below the permanent calyx-teeth, sometimes sub-tuberculate and always stellate-tomentose, about 1 in. long. Blume *Mus. Bot.* I, 33; Naud. in *Ann. Sc. Nat. Ser. 3, XV*, 279; Miq. *Fl. Ind. Bat. I*, pt. I, 533; Triana in *Trans. Linn. Soc. XXVIII*, 82; C. B. Clarke in *Hook. fil. Fl. Br. Ind. II*, 542; Cogn. in *DC. Mon. Phan. VII*, 549. *M. affinis*, Korth. in *Verh. Nat. Gesch. Bot.* 241, t. 60; Miq. l.c. 533. *Melastoma nemorosum*, Jack in *Trans. Linn. Soc. XIV*, 8; *DC. Prodr. III*, 149; Wall. *Cat.* 4043.

In all the provinces except the Nicobar and Andaman Islands.
DISTRIB. Sumatra, Borneo.

2. *MARUMIA RHODOCARPA*, Cogn. in *DC. Mon. Phan. VII*, 550. A powerful climber; young branches, petioles, lower surfaces of leaves and calyx densely clothed with minute, pale, stellate tomentum intermixed with numerous stout, spreading, brown bristles, the nodes somewhat swollen and with transverse lines. *Leaves* sub-coriaceous, oblong, narrowed to the rounded, minutely cordate base, the apex shortly acuminate, 5-nerved (the lateral pair slender); upper surface glabrous; length 3·5 to 5 in.; breadth 1 to 2 in.; petiole ·15 to ·2 in. *Flowers* (including the stamens) nearly 1·5 in. long, in axillary, pedunculate cymes of three. *Calyx-tube* longer than the glabrous pedicel, narrowly campanulate, constricted below the limb; limb with 4 oblong, acute teeth half as long as the tube and like the latter bearing many long, curved bristles. *Petals* white, obovate. *Stamens* 8, unequal, all linear and acuminate: the four larger with two long, filiform appendages in front and several smaller behind: the four smaller with about 4 to 6 appendages. *Fruit* shortly ovoid, crowned by the large calyx-teeth, bristly, ·4 in. in diam. *Melastoma rhodocarpum*, Wall. *Cat.*, 4045. *Marumia echinata*, Naud. *Ann. Sc. Nat. Ser. 3, XV*, 280; Miq. *Fl. Ind. Bat. I*, pt. I, 534. *M. zeylanica*, Triana

(not of Blume) in Linn. Trans. XXVIII, 82, tab. VII, fig. 88b; C. B. Clarke in Fl. Br. Ind. II, 542.

SINGAPORE; Wallich; Anderson 68, 69; Hullett 125; Ridley 258; King's Collector 278. MALACCA; Maingay (K.D.) 785; Cuming; Griffith (K.D.) 2270.

VAR. *sub-glabrata*, Cogn. l.c. 550. Leaves glabrous beneath except the nerves. *M. zeylanica*, C. B. Clarke (not of Blume), VAR. *sub-glabrata*, Hook. fil. Fl. Br. Ind. II, 542.

SINGAPORE; Anderson 64.

3. *MARUMIA RETICULATA*, Blume Mus. Bot. I, 34. Scandent; young branches, petioles, under surfaces of leaves and calyx densely clothed with rusty stellate, more or less deciduous hairs, the young branches, petioles and especially the calyx with stout spreading bristles intermixed; the nodes swollen and annulate. Leaves subcoriaceous, ovate-lanceolate, 5-nerved (the lateral pair slender), minutely cordate at the base, the apex shortly acuminate; upper surface deeply reticulate, glabrous; length 2 to 3.5 in., breadth .8 to 1.5 in., petiole .1 to .2 in. Flowers 1.25 in. long (including the anthers), axillary, either solitary on pedicels as long as themselves or in pedunculate cymes of three; the middle flower being nearly sessile, the lateral pair on short pedicels. Calyx-tube densely hispid externally, the teeth 4, short, broadly triangular and blunt, tomentose on the inner surface. Petals ovate, sub-acute, glabrous. Stamens 8, the anthers somewhat unequal in length but all linear, curved and with two long appendages at the base in front. Fruit ovoid, (unripe) .5 in. in diam., crowned by the calyx-teeth. Miq. Fl. Ind. Bat. I, pt. I, p. 535; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 542; Cogn. in DC. Mon. Phan. VII, 551. *M. stellulata*, Korth. (not of Blume) Ver. Nat. Gesch. Bot. 243. *M. oligantha*, Naud. in Ann. Sc. Nat. Ser. 3, XV, 281; Miq. l.c. 534.

MALACCA; Griffith (K.D.) 2269; Maingay 784. DISTRIB. Sumatra, Java.

11. DISSOCHÆTA, Blume.

Shrubs, usually twiners. Leaves opposite, petioled or nearly sessile, elliptic or oblong-lanceolate, rounded at the base, 5-nerved from the base (the two submarginal nerves slender), entire. Flowers in terminal, sometimes leafy panicles, purple or white, bracts large or small. Calyx-tube campanulate-cylindric or funnel-shaped, densely stellate-tomentose, pubescent or glabrous; limb obscurely 4-lobed or entirely truncate, more rarely distinctly 4-toothed, persistent. Petals 4. Stamens 8, unequal, 4 shorter sometimes wanting, connective of the 4 longer with 2 long bristles in front at the base. Ovary adnate to the

calyx, 4-celled, apex glabrous or densely hairy; style filiform; ovules very many, placentas axile. *Berry* ovoid or elliptic, crowned by the calyx-limb. *Seeds* ellipsoid, flattened on the side of the raphe.—**DISTRIB.** Species 25; throughout Malaya to the Philippines.

Stamens 8 (four of them sometimes imperfect):—

Young branches, under surfaces of leaves and panicles covered with persistent stellate-tomentum:—

The stellate-tomentum not mixed with bristles; the nodes with transverse interpetiolar lines:—

Flowers 1·75 in. long 1. *D. annulata*.
Flowers .75 in. long 2. *D. punctulata*.

The stellate-tomentum mixed with spreading persistent bristles; flowers .75 in. long ... 3. *D. hirsuta*.

Young branches, under surfaces of leaves and panicles covered at first with stellate-tomentum which ultimately more or less disappears:—

Bracts of panicle obovate, persistent 4. *D. bracteata*.
Bracts of panicle linear, deciduous 5. *D. pallida*.

Young branches, under surfaces of leaves and panicles covered with minute simple scales not stellate ... 6. *D. gracilis*.

Stamens 4:—

Panicles ebracteate, or bracts, if any, caducous:—

Flowers .3 in. long; fruit .15 to .2 in. in diam.; mouth of calyx-tube 4-toothed; petals broadly oblong, blunt; stamens blunt, not appendiculate at the apex 7. *D. celebica*.

Flowers .5 in. long; fruit .2 to .25 in. in diam.; mouth of calyx-tube truncate not toothed; petals ovate, acute; stamens narrowed to the appendiculate apex 8. *D. intermedia*.

Panicles with persistent, oblong bracts:—

Young branches at first rusty stellate-hairy, finally glabrous; branches of panicle divaricating, lax 9. *D. anomala*.

Young branches with persistent, pale, adpressed, stellate hairs; branches of panicle short, condensed 10. *D. Scortechinii*.

1. **DISSOCHÆTA ANNULATA**, Hook. fil. ex Triana in Trans. Linn. Soc. XXVIII, 83. A strong climber; young branches, petioles, under surfaces of leaves and inflorescence covered with dense, rusty, deciduous stellate tomentum, the nodes thickened and slightly annulate. *Leaves* coriaceous, ovate-oblong, cordate at the base, the apices shortly and rather abruptly acuminate, upper surface at first sparsely stellate-hairy, ultimately glabrous, the nerves and reticulations bold; length 2·5 to 3·5 in.; breadth 1 to 1·8 in.; petiole .2 to .5 in. *Panicle* solitary terminal, much longer than the leaves, lax, the branches divaricating,

cymose, 1- to 3-flowered; bracts small, caducous. *Flowers* 1·5 in. long (including the stamens), pedicels much shorter than themselves. *Calyx-tube* narrowly campanulate or funnel-shaped, the mouth widened and with 4 blunt, triangular teeth, densely stellate-hairy outside. *Petals* obovate-oblong, blunt, reflexed. *Stamens* 8; curved, elongate-linear, acuminate, with two bristle-like appendages at the base in front, lacinate behind. *Fruit* ellipsoid, succulent, crowned by the enlarged teeth of the calyx-tube. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 543; Cogn. in DC. Mon. Phan. VII, 557. *Melastoma bracteatum*, Wall. Cat. 4044 (in part).

PENANG; *Wallich* 4044; *Griffith* (K.D.) 2268; *Maingay* (K.D.) 788; *Curtis* 740. MALACCA; *Wallich*. SINGAPORE; *Hullet* 213; *Ridley* 5187. JOHORE; *King's Collector* 224. PERAK; *Scortechini* 235. **DISTRIB.** Borneo.

2. *DISSOCHETA PUNCTULATA*, Hook. fil. ex Triana in Linn. Trans. XXVIII, 83. Young branches thickened but not annulate, clothed like the petioles, under surfaces of the leaves and the inflorescence with minute, rusty scales. *Leaves* coriaceous, oblong-ovate, the base rounded and not cordate, the apex acute or very shortly acuminate; 5-nerved, the marginal nerves very slender; upper surface glabrous; length 3 to 4·5 in.; breadth ·75 to 1·75 in.; petiole ·25 to ·4 in. *Panicles* solitary, terminal, several times longer than the leaves, the branches and branchlets short and the latter cymosely few-flowered, bracts small, linear, deciduous. *Flowers* ·75 in. long (including the stamens), on pedicels shorter than themselves. *Calyx-tube* infundibuliform, the mouth with a broad, everted, wavy, obscurely toothed edge, deciduously scaly. *Petals* 4, ovate, sub-acute, glabrous. *Anthers* 8, equal, curved, cylindrical, attenuated to the 1-pored apex, the base with two long, geniculate, upward-curving, narrow, flattish appendages. *Fruit* succulent, urceolate, slightly warted, sub-glabrous, crowned by the slightly enlarged mouth of the calyx, ·4 in. long. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 543; Cogn. in DC. Mon. Phan. VII, 555.

MALACCA; *Griffith* (K.D.) 2291! *Maingay* 789. SINGAPORE; *Ridley* 3918, 4803. SELANGORE; *Ridley* 2015. JOHORE; *Ridley* 3246, 2106. PENANG; *Walker*, etc.

3. *DISSOCHETA HIRSUTA*, Hook. fil. ex Triana Trans. Linn. Soc. XXVIII, 83. A strong creeper with slender branches only slightly thickened at the nodes; all parts except the upper surfaces of the leaves and the petals densely clothed with deciduous, stellate hairs mixed with long, stiff, spreading, curved hairs. *Leaves* membranous, lanceolate or ovate-lanceolate, 5-nerved (the lateral pair slender), the base rounded and slightly cordate, the apex shortly acuminate; upper surface

glabrous, length 3 to 4·5 in.; breadth 1 to 1·75 in.; petiole ·15 to ·3 in. *Panicle* solitary, terminal, thickened at the nodes, broadly pyramidal, much branched. *Flowers* ·75 in. long. *Calyx-tube* longer than the pedicel, cylindric-tubular, the mouth not everted but with four linear elongate teeth. *Petals* 4, broadly lanceolate, blunt. *Stamens* 8, equal, all perfect, elongate and narrow, the apices much prolonged into a rather thin appendage, the base with two delicate, filiform appendages. *Fruit* ovoid-globose, crowned by the persistent calyx-limb, densely setose-lepidote, ·4 in. in diam. Cogn. in DC. Mon. Phan. VII, 556.

JOHORE; at the base of Gunong Panti; *King's Collector* 197; *Ridley* 4185. DISTRIB. Borneo.

4. DISSOCHÆTA BRACTEATA, Blume in *Flora*, 1831, 495. Young branches with a transverse ridge at the nodes, petioles and panicles more or less densely clothed with sub-deciduous, rusty, stellate hairs, and the under surfaces of the leaves sparsely so. *Leaves* membranous, 5-nerved (the marginal pair faint), ovate-lanceolate, the base rounded and often sub-cordate, the apex acute or shortly acuminate; upper surface glabrous, the lower sparsely stellate-hairy; length 3 to 4·5 in.; breadth 1·25 in.; petiole ·2 to ·3 in. *Panicles* much bracteate, both axillary and terminal, the former shorter, the latter longer, than the leaves; the branches few, divaricate. *Flowers* 1·2 in. long (including the stamens), in cymes at the ends of the branchlets, each subtended by, and while in bud enveloped in, a membranous, obovate, blunt, stellate-pubescent, more or less permanent bract about ·5 in. long. *Calyx-tube* twice as long as the pedicels, cylindric-campanulate, the mouth slightly widened and minutely 4-toothed. *Petals* broadly elliptic, blunt, glabrous. *Stamens* 8, much curved, long, linear, the base with two long flattened, linear, upward-pointing appendages. *Fruit* ellipsoid, crowned by the rim of the calyx-tube, ·6 in. long. *Miq.* Fl. Ind. Bat. I, pt. I, 529; *Triana* in *Trans. Linn. Soc. XXVIII*, 84; *C. B. Clarke* in *Hook. fil. Fl. Br. Ind. II*, 543; *Cogn.* in DC. Mon. Phan. VII, 598. *D. bracteosa*, *Naud.* in *Ann. Sc. Nat. Ser. 3, XV*, 76; *Miq.* Fl. Ind. Bat. I, pt. I, 527. *Melastoma bracteatum*, *Jack* in *Trans. Linn. Soc. XIV*, 9; *Wall. Cat.* 4044, partly.

PENANG; *Wallich*, *Cat.* 4044; *Curtis* 2298. MALACCA; *Maingay* 791. DISTRIB. Borneo, *Haviland*.

5. DISSOCHÆTA PALLIDA, Blume in *Flora*, 1831, 500. A shrubby creeper, 20 to 50 feet long; young branches thickened and with interpetiolar ridges at the nodes, sparsely covered with minute stellate-hairy scales like the petioles, under surfaces of the leaves and the panicles. *Leaves* sub-coriaceous, 5-nerved (the lateral pair faint), elliptic-ovate to ovate, the base rounded and sub-cordate, the apex shortly acuminate

or acute; upper surface glabrous; length 2·5 to 5 in.; breadth 1·2 to 2·2 in.; petiole ·3 to ·5 in. *Panicles* both axillary and terminal, the former shorter than the leaves or slightly exceeding them, the latter longer, all rather lax, the branchlets divaricating, cymose, and with a few short, linear, deciduous bractlets. *Flowers* nearly 1 in. long (including the stamens). *Calyx-tube* oblong-campanulate or funnel-shaped, densely lepidote-stellate; the mouth expanded and obscurely 4-toothed. *Petals* obovate-oblong, blunt, glabrous. *Stamens* 8, usually equal (four sometimes shorter or obsolete); basal processes long, linear, sub-erect. *Fruit* cylindric-campanulate, sub-glabrous, crowned by the slightly enlarged limb of the calyx, ·25 in. long. Blume, Mus. Bot. I, 36 (excl. syn. Korth.); Naudin in Ann. Sc. Nat. Ser. 3, XV, 69, tab. 4 fig.; Miq. Fl. Ind. Bat. I, pt. I, 528; Triana in Trans. Linn. Soc. XXVIII, 83, tab. VII, fig. 89*b*; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 544; Cogn. in DC. Mon. Phan. VII, 557. *Melastoma pallida*, Jack in Trans. Linn. Soc. XIV, 12; DC. Prodr. III, 150; Wall. Cat. 4049. *Dissocheeta ovalifolia* and *D. superba*, Naud. l.c. 76 and 77. *D. astrotricha*, Miq. l.c. Suppl. 318.

In all the provinces except the Nicobar and Andaman Islands; common.

The four stamens which are usually shorter than the other are sometimes obsolete.

6. DISSOCHÆTA GRACILIS, Blume in Flora, 1831, 498. A straggling or scandent shrub; young branches slender, bluntly 4-angled, the nodes swollen and transversely ridged, minutely scaly like the petioles, leaves and panicles. *Leaves* 5-nerved (the lateral pair slender), broadly lanceolate or oblong-lanceolate, rounded at the base and shortly acuminate at the apex; length 3 to 4·5 in.; breadth 1·5 to 1·8 in.; petiole ·2 to ·4 in. *Panicles* axillary and terminal, the former shorter than, and the latter longer than the leaves, slender, spreading, lax, many-flowered; bracts few, narrowly oblong, caducous. *Flowers* ·35 in. long, on filiform pedicels longer than themselves. *Calyx-tube* narrowly campanulate, minutely stellate-pubescent, the mouth glabrous, sub-truncate, everted, and obscurely 4-toothed. *Petals* 4, broadly ovate or sub-orbicular, blunt. *Stamens* 8; four large, perfect, rather short, with a broad truncate 2-pored apex; the four imperfect small, narrow; all with two erect, filiform flat basal appendages. *Fruit* sub-globular, crowned by the narrow limb, almost glabrous, ·1 to ·15 in. in diam. Korthals Verh. Nat. Gesch. Bot. 237; Naud. in Ann. Sc. Nat. Ser. 3, XV, 75; Miq. Fl. Ind. Bat. I, pt. I, 526; Triana in Trans. Linn. Soc. XXVIII, 83, tab. VII, fig. 89*c*; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 544; Cogn. in DC. Mon. Phan. VII, 559. *Melastoma gracile*, Jack

in Trans. Linn. Soc. XIV, 14; DC. Prodr. III, 149. *M. fallax*, Wall. Cat. 4080. ? *M. glauca*, Griff. Ic. Pl. As. 637. *M. vacillans*, var. *pallens*, Blume, Bijdr. 1074.

In all the provinces except the Nicobar and Andaman Islands.
DISTRIB. Java, Borneo.

7. DISSOCHÆTA CELEBICA, Blume, Mus. Bot. I, 36. A slender creeper; young branches, petioles and under surfaces of the leaves, also the panicles, densely clothed with rusty, scurfy, stellate tomentum. *Leaves* 3-nerved, membranous, lanceolate or oblong-lanceolate, the base rounded, the apex shortly acuminate; upper surface glabrous except the stellate-pubescent midrib; length 2·5 to 5 in.; breadth 1 to 2 in.; petiole ·2 to ·25 in. *Panicles* lateral and terminal, the former slightly longer and the lateral several times longer than the leaves, ebracteate, the branches divaricating, the ultimate branches cymose, 3-flowered. *Flowers* ·3 in. long (including the stamens). *Calyx-tube* oblong-campanulate, slightly widened and 4-toothed at the mouth, somewhat longer than the pedicel. *Petals* 4, broadly oblong, blunt. *Stamens* 4; anthers equal, short, blunt and with no apical appendage, opening by 2 apical pores. *Fruit* sub-globular, crowned by the narrow limb of the calyx, faintly 8-ribbed, sparsely pubescent or sub-glabrous, ·15 to ·2 in. in diam. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 544; Cogn. in DC. Mon. Phan. VII, 561; Miq. Fl. Ind. Bat. I, pt. I, 530; Triana in Trans. Linn. Soc. XXVIII, 83. *D. microcarpa*, Naud. in Ann. Sc. Nat. Ser. 3, XV, 72; Miq. l.c. 523. *D. bancana*, Miq. l.c. 529. *Melastoma fallax*, Wall. Cat. 4050; ? Jack in Trans. Linn. Soc. XIV, 13. *M. rubiginosum*, Wall. Cat. 4052, partly.

In all the provinces except the Nicobar and Andaman Islands; common. DISTRIB. Bangka, Celebes, Borneo.

VAR. *contracta*, King. *Panicle* solitary, terminal, short, condensed, not longer than the leaves.

PERAK; King's Collector 2911.

8. DISSOCHÆTA INTERMEDIA, Blume in Flora, 1831, 493. A somewhat slender creeper, resembling *D. celebica* in its other parts, but with larger flowers (·5 in. long), pointed in bud; larger fruit (·2 to ·25 in. in diam.); calyx-tube with a truncate, toothless mouth; ovate, acute petals, and longer stamens narrowed to and appendiculate at the apex. Blume, Mus. Bot. I, 35, tab. V; Naud. in Ann. Sc. Nat. Ser. 3, XV, 72; Miq. Fl. Ind. Bat. I, pt. I, 524; Triana in Trans. Linn. Soc. XXVIII, 83, tab. VII, fig. 89 f.; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 544; Cogn. in DC. Mon. Phan. VII, 562. *Melastoma rubiginosum*, Wall. Cat. 4052 (in part).

MALACCA; Griffith (K.D.) 2287; Helfer (K.D.) 2286. PENANG and SINGAPORE; Wallich. PERAK; Scortechini. DISTRIB. Java, Borneo.

9. *DISSOCHÆTA ANOMALA*, King, n. sp. A creeper 15 to 20 feet long; young branches slender, slightly thickened at the nodes, at first sparsely rusty stellate-hairy, afterwards glabrous and sub-glabrous. *Leaves* ovate-oblong, the base broadly rounded, the apex shortly, abruptly and bluntly acuminate, 5-nerved (the two lateral nerves faint); upper surface glabrous; the lower sparsely stellate-hairy on the midrib and nerves, otherwise glabrous; length 3·5 to 6·5 in.; breadth 1·75 to 2·75 in.; petiole sparsely hispid, ·2 in. long. *Panicles* axillary and terminal, the former half as long and the latter twice as long as the leaves, stellate-pubescent especially at the thickened nodes; the branches divaricate, trichotomous, lax, bracteate at the divisions; the bracts ·3 in. long, oblong, blunt, involute, stellate-tomentose, their edges ciliate. *Flowers* ·3 in. long, in cymes of three. *Calyx-tube* shorter than the pedicel, narrowly campanulate, densely stellate-tomentose; the mouth without teeth, truncate, not everted. *Petals* glabrous, ovate, acuminate, forming a pointed bud. *Stamens* 4, equal and all perfect, subsessile, broad, blunt, the lateral basal appendages filamentous. *Fruit* broadly campanulate, crowned by the narrow calyx-limb, glabrous, ·15 in. in diam.

PERAK; *King's Collector* 2258, 10468.

This plant forms a collecting link between the genera *Anplectrum* and *Dissochæta* as they are defined in this work. It agrees in externals with *Anplectrum pallens*, and has the 4 stamens of that genus, but their anthers have the elongate basal processes so well developed in *Dissochæta* and not at all represented in *Anplectrum*.

10. *DISSOCHÆTA SCORTECHINII*, King, n. sp. Scandent; young branches slender, the nodes swollen and transversely ridged, thinly clothed with minute, pale, stellate hairs. *Leaves* ovate-lanceolate, slightly cordate at the broad base, the apex with a short, blunt point; 5-nerved (the lateral pair small); upper surface glabrous; lower rusty in colour and bearing sparse, white, stellate hairs longer than those on the stem; length 2·5 to 3·75 in.; breadth 1·5 to 2 in.; petiole densely rusty stellate-tomentose, ·1 in. long. *Panicle* solitary, narrow, terminal, shorter than the leaves, densely rusty stellate-tomentose, the branches short and few-flowered, bearing many oblong, blunt or spatulate, pale, 3-nerved almost glabrous bracts longer than the flower-bud, the lower ones much larger. *Flowers* ·3 in. long, their pedicels short. *Calyx-tube* narrowly campanulate, at first densely but afterwards sparsely stellate-tomentose; the mouth truncate, without teeth, waved but not everted, glabrous. *Petals* 4, glabrous, orbicular-ovate, acuminate, forming a pointed bud. *Stamens* 4, all equal and perfect, short, broadly ovate, the base with two long, erect, filiform appendages, the broad apex with a small, pale,

subacute appendage. *Fruit* unknown. *D. intermedia*, Scort. MSS. (not of Blume), in Herb. prop.

PERAK; *Scortechini* 23, 34. PENANG; *Curtis* 1301.

12. ANPLECTRUM, A. Gray.

Twining shrubs. *Leaves* subcoriaceous, or rarely coriaceous, opposite, short-petioled, entire, oblong, narrowed upwards, 3-5-nerved from the base. *Flowers* white, in terminal panicles sometimes leafy at the base. *Calyx-tube* funnel-shaped or ovoid, limb obscurely 4-lobed or truncate. *Petals* 4. *Stamens* 4 perfect, rarely 8, anthers attenuated upwards, opening by one pore, connective at base shortly appendaged or subnude, never with two long bristles in front, rarely with a long appendage and two small erect bristles; imperfect stamens 4, 2, or 0. *Ovary* 4-celled, free at the apex, with 4 vertical ridges; style simple; ovules many, placentas axile. *Berry* ovoid or globose, crowned with the calyx-limb. *Seeds* very many, small, falcate, obovoid; raphe long, lateral. **DISTRIB.** Species about 18, in Malaya and the Philippines.

Stamens 4 perfect :—

Nodes of the young branches and of the lower part of the panicle with conspicuous, stellately lepidote, bristly annuli 1. *A. lepidoto-setosum*.

Nodes of the young branches and of the panicle with a small smooth annulus or faint transverse ridge :—

Calyx-tube funnel-shaped; stamens 4, all perfect; young branches stellate-hairy 2. *A. glaucum*.

Calyx-tube ovoid to globular-ovoid; stamens 8, the anthers of 4 of them narrow and imperfect; young branches glabrous or nearly so 3. *A. pallens*.

Nodes not annulate; stamens 8, the anthers of 4 of them narrow and imperfect; young branches and panicles densely stellate-scaly 4. *A. divaricatum*.

Stamens 8 perfect 5. *A. anomalum*.

1. ANPLECTRUM LEPIDOTO-SETOSUM, King, n. sp. Young branches slender, conspicuously annulate at the nodes, sparsely clothed with coarse, spreading hairs with thickened points, the very youngest also with deciduous, stellate hairs. *Leaves* oblong-lanceolate, 5-nerved; the base rounded and minutely cordate, the apex shortly caudate-acuminate; both surfaces glabrous except for a few coarse hairs near the petiole; the lower shining and pale when dry; length 4.5 to 6 in.; breadth 1.1 to 1.8 in.; petiole very short, attached to the cup-shaped, densely rufous stellate-tomentose node and like it with scattered

bristle-hairs. *Panicle* terminal, solitary, shorter than the leaves, everywhere densely rusty-tomentose with long bristles intermixed, annulate at the bases of the short, spreading, few-flowered branches. *Calyx-tube* cylindrical; the mouth undulate-truncate, obscurely toothed, its outer surface stellate-lepidote with a few long bristles near the mouth. *Petals* 4, ovate, glabrous. *Stamens* 8 (4 large and 4 small); the large broad, and with a short, grooved ridge on the back near the base, blunt; the 4 small linear, very acuminate. *Capsule* ovoid-globular, truncate, nearly glabrous, .15 in. in diam.

PERAK; *Scortechini* 2106.

2. ANPLECTRUM GLAUCUM, Triana in Trans. Linn. Soc. XXVIII, 84 (excluding much of the synonymy). Scandent, to 20 or 30 feet; young branches 4-grooved, stellate-hairy like the petioles and main nerves of the leaves and the inflorescence, the nodes inconspicuously annulate or transversely ridged. *Leaves* oblong-lanceolate, rounded or slightly narrowed to the often slightly cordate base, the apex shortly acuminate or acute, boldly 3-nerved; both surfaces glabrous except for some scattered, stellate hairs; length 3 to 5 in.; breadth 1 to 2 in.; petiole .5 to .25 in. *Panicle* large, terminal, solitary, several times larger than the leaves, pyramidal, its branches divaricate, many-flowered. *Flowers* drooping, .4 or .5 in. long (including the stamens). *Calyx-tube* funnel-shaped, sub-glabrous; the mouth truncate, not toothed, everted with age. *Petals* ovate-lanceolate with truncate bases, the apex acuminate. *Stamens* 4; *anthers* much curved, all perfect, their bases not lobed but with a corrugated membranous process in front. *Ovary* prominently 4-winged. *Fruit* truncate, sub-globular, glabrous, .2 in. long (when dry). C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 545; Cogn. in DC. Mon. Phan. VII, 566. *A. cyanocarpum*, Kurz in Journ., As. Soc., 1877, pt. 2, p. 78 (not of Triana). *Melastoma glauca*, Jack in Trans. Linn. Soc. XIV, 15; DC. Prodr., 151. *M. cernuum*, Wall. Cat. 4055 (not of Roxb.). *Osbeckia tetrandra*, Roxb. Fl. Ind. II, 224. *Dissochæta glauca*, Blume in Flora, 1831, p. 501. *D. spoliata*, Naud. in Ann. Sc. Nat. Ser. 3, XV, 69, t. 4, fig. 1.

In all the provinces, common. *DISTRIB.* Sumatra, Java, Borneo.

3. ANPLECTRUM PALLENS, Blume, Mus. Bot. I, 38. Scandent, to 30 or 40 feet; young branches terete, glabrous or minutely puberulous, especially near the slightly thickened and transversely ridged nodes, round. *Leaves* oblong, the base rounded, the apex abruptly, bluntly and shortly sub-caudate-acuminate, 5-nerved (the marginal pair slender), the edges (when dry) slightly recurved; upper surface glabrous, the lower minutely and scantily stellate-puberulous; length 1.5 to 4.5 in., breadth .5 to 1.5 in.; petiole .1 to .2 in. *Panicles* axillary (about as

long as the leaves) and terminal (much longer than the leaves), slender, spreading, lax, rather few-flowered, with a small, blunt, oblong, deciduous bract under each branch, finely rufous stellate-pubescent. *Flowers* about $\cdot 4$ in. long (including the stamens). *Calyx-tube* ovoid to globular-ovoid, densely rufous-puberulous when young, glabrous when old, the mouth slightly expanded and with very small teeth. *Petals* ovate, acute, glabrous. *Anthers*; the four large much curved and sub-acute; the rudimentary linear, acuminate. *Capsule* globose-obovoid, glabrous, $\cdot 15$ in. in diam. Naud. in Ann. Sc. Nat. Ser. 3, XV, 303; Triana in Trans. Linn. Soc. XXVIII, 303; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 545; Cogn. in DC. Mon. Phan. VII, 564. *Melastoma petiolare*, Wall. Cat. 4053.

In all the provinces except the Andaman and Nicobar Islands; not uncommon. **DISTRIB.** Sumatra, Borneo.

4. *ANPLECTRUM DIVARICATUM*, Triana in Trans. Linn. Soc. XXVIII, 84 (in part), tab. VII, fig. 90b. Scandent, to 20 or 30 feet; young branches obscurely quadrangular, and like the petioles, nerves of the leaves on both surfaces, and the inflorescence, densely covered with tawny, stellate scales, not annulate at the nodes. *Leaves* lanceolate, acute or sub-acute, the base minutely cordate, 5-nerved, the marginal pair slender; both surfaces, but especially the lower, with glandular-punctate scales between the nerves and veins; length 2 to 3 in.; breadth $\cdot 6$ to $1\cdot 1$ in.; petiole $\cdot 15$ to $\cdot 25$ in. *Panicle* solitary, terminal, pyramidal, several times as long as the leaves, the branchlets divaricate, each with two ovate-lanceolate, ciliate, furfuraceous, deciduous bracts at its base and three flowers in a cyme at the apex. *Flowers* $\cdot 4$ in. long, on short pedicels. *Petals* oblong, acute. *Calyx-tube* narrowly obovoid, campanulate, truncate, densely furfuraceous stellate-tomentose. *Anthers* 8; the 4 large thick and much curved, obtuse; the smaller narrow. *Capsule* globose-obovoid, with a narrow, everted rim, length $\cdot 15$ to $\cdot 2$ in. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 546; Cogn. in DC. Mon. Phan. VII, 567. *Melastoma divaricatum*, Willd. Spec. Pl. II, 596; DC. Prodr. III, 150. *M. polyanthum*, Benth. in Wall. Cat. 4051. *Dissochaeta divaricata* and *D. pepericarpa*, Naud. Ann. Sc. Nat. Ser. 3, XV, 70 and 71. *D. anceps*, Naud. l.c. 70. *D. palembanica*, Miq. Fl. Ind. Bat. Suppl. 317.

MALACCA; Griffith (K.D.) 2288/1: Maingay (K.D.) 794: Harvey. PENANG; Wallich 4051. PERAK; King's Collector 369. **DISTRIB.** Java, Borneo, Sumatra.

5. *ANPLECTRUM ANOMALUM*, King and Stapf, n. sp. A woody creeper, 20 to 100 feet long; young branches as thick as a wheat-straw, terete, covered with stellate, rusty scurf. *Leaves* coriaceous, obovate or

oblong, blunt, much narrowed to the base, 3-nerved, glabrous on the upper, rusty stellate-hairy on the lower surface like the petioles and inflorescences; length 1 to 1.5 in.; breadth .6 to .9 in.; petiole .2 in. *Panicles* terminal, sometimes leafy, 3 to 6 in. long, lax, the branches in pairs, divaricate, many-flowered, minutely bracteolate at the divisions. *Flowers* .35 in. long, the pedicels somewhat longer. *Petals* oblong, obtuse, waxy, reflexed, pale greenish-white. *Stamens* 8, equal; anthers inflexed in aestivation, lanceolate-subulate, the base of the lobes produced into an elongated halbert-shaped process with two erect subulate processes at its broad upper end. *Fruit* (not quite ripe) ovoid-globose, greenish-yellow, .2 in. in diam.

PERAK; *King's Collector* 5779, 10357.

This plant differs from *Anplectrum*, as the genus has hitherto been limited, in having 8 anthers, each of which has a very much produced halbert-shaped basal process, from which two erect hair-like appendages originate at the upper or broad end. The plant agrees better with *Anplectrum* than with any other *Melastomaceous* genus, but it might possibly be better treated as the basis of a new one.

13. MEDINILLA, Gaud.

Branching shrubs, erect or scandent. *Leaves* opposite or whorled, rarely alternate, entire, often fleshy, mostly glabrous, usually longitudinally 3-9-nerved. *Flowers* in terminal panicles or lateral cymes, white or rose, with or without bracts, 4- or 5-, rarely 6-merous. *Calyx-tube* ovoid or cylindric, limb truncate or obscurely toothed. *Stamens* twice as many as the petals, equal or nearly equal (rarely unequal); anthers opening at the top by one pore; connective not (or very shortly) produced at the base but having two tubercles in front and a spur behind. *Ovary* inferior, 4-6-celled, usually glabrous at the apex; style filiform; ovules very many, placentas axile. *Berry* crowned by the limb of the calyx. *Seeds* very many, ovoid or subfalcate, raphe often thickened and excurrent.—**DISTRIB.** Species about 100; mainly in Malaya, East Bengal and Ceylon; a few in the Fiji Archipelago and in the East African islands.

Flowers 4-merous:—

Leaves alternate	...	...	...	1. <i>M. scandens.</i>
Leaves in whorls (large)	...	...	...	2. <i>M. speciosa.</i>

Leaves opposite:—

Flowers in terminal panicles, anthers dissimilar	...	3. <i>M. heteranthera.</i>
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Flowers in lateral panicles, anthers similar:—

Anther-cells with tubercles at their bases in front,
and a short spur from the connective behind:—

Flowers 1 in. long	4. <i>M. venusta.</i>
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Flowers under '5 in. long :—

Leaves petiolate	5. <i>M. Hasseltii.</i>
Leaves sessile	6. <i>M. Scortechinii.</i>
Anther-cells with tubercles at the base in front, but no spur from the connective behind	...	...	...	7. <i>M. Mainingyi.</i>

Flowers 5-merous :—

Leaves in whorls :—

Leaves elliptic or obovate, blunt, 1 to 2'75 in. long, fruit '15 in. in diam.	...	...	...	8. <i>M. Clarkei.</i>
Leaves oblanceolate or narrowly obovate, acuminate, 3 to 5 in. long ; fruit '4 in. in diam.	...	...	...	9. <i>M. crassinervia.</i>
Leaves elliptic-rotund, blunt, 2'5 to 5'5 in. long ; fruit '35 in. in diam.	...	...	...	10. <i>M. perakensis.</i>

1. *MEDINILLA SCANDENS*, King, n. sp. A climber, 15 to 30 feet long, rooting and adhering to trees ; the stems rough, as thick as a swan's quill. *Leaves* alternate, glabrous, long-petioled, subcoriaceous, elliptic or ovate-oblong, shortly acuminate, the base cuneate ; nerves 5 to 7, mostly from the midrib above its base ; length 4'5 to 9 in. ; breadth 2'5 to 6 in. ; petioles 1'5 to 7 in. *Flowers* '4 in. long, in dense fascicles in the axils of fallen leaves, on rusty-puberulous, minutely bracteolate pedicels. *Calyx-tube* narrowly campanulate ; the limb very slightly expanded, truncate, very obscurely toothed. *Petals* 4, ovate-oblong, acute. *Stamens* 8 ; *anthers* narrowly elliptic, with a long apical 1-pored beak ; and at the base a short, broad, blunt process from the connective behind, the lobes of the anthers slightly produced in front and minutely tuberculate.

PERAK ; *Scortechini* 86 and 150 ; *King's Collector* 1814.

This resembles *M. alternifolia*, Blume, but has a much shorter spur from the connective at the base of the anthers. It has also larger leaves and more numerous flowers in the fascicles.

2. *MEDINILLA SPECIOSA*, Blume in *Flora*, 1831, p. 515. A glabrous shrub or small tree, not epiphytal ; young branches as thick as the little finger, 3- or 4-angled ; the bark shining, pale when dry, bearing at the nodes numerous stout, subulate bristles '5 in. long. *Leaves* large, subcoriaceous, in whorls of 3 (rarely of 4) or in pairs, sessile, or very shortly petiolate, oblanceolate or obovate-oblong, sometimes elliptic, acute, the base cuneate, nerves 7 to 9 mostly from the midrib above its base, all except the lowest pair bold, the veins slender ; length 6 to 12 in. ; breadth 2'75 to 5 in. *Panicles* lateral and terminal, 4 to 8 or even 14 in. long, on peduncles equally long, many-flowered ; the branches with a whorl of small reflexed bracts at their bases ; whorled, spreading, minutely bracteolate at the divisions. *Calyx-tube* cupular, slightly constricted below the narrow, minutely 4-toothed limb. *Petals* 4, ovate-

acute. *Fruit* ovoid, .3 in. in diam. Bot. Mag. t. 4321; Morren in Ann. Soc. Hort. Gand. V, 281; Naud. in Ann. Sc. Nat. Ser. 3, XV, 291; Miq. Fl. Ind. Bat. I, pt. I, p. 540; Triana in Linn. Trans. XXVIII, 87; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 549. *Melastoma eximium*, Blume Bijdr. (not of Jack). *Melastoma speciosum*, Reinw. ex Blume, in Flora, 1831, 516.

MALACCA; *Maingay* (Kew Distrib.) 798. PENANG; *Hullett* 203; *Curtis* 874; *King's Collector* 1595. PERAK; *Wray* 3218; *King's Collector* 2652. DISTRIB. Moluccas, Java, Sumatra.

3. *MEDINILLA HETERANTHERA*, King, n. sp. Epiphytal and terrestrial; branches slender, smooth, reddish when fresh, drying dark purplish-brown. *Leaves* of the pairs somewhat unequal, ovate-lanceolate to lanceolate, acuminate, the base slightly narrowed, glabrous, 3-nerved; length 2.5 to 5.25 in.; breadth 1 to 1.8 in.; petioles .3 to .8 in. *Panicles* terminal on the branches, half as long as the leaves, corymbosely cymose, 5- or 6-flowered, minutely bracteolate. *Flowers* .75 in. long, their pedicels much shorter. *Calyx-tube* cylindric, the mouth wide and with 4 broad, shallow teeth. *Petals* 4, ovate-lanceolate, shortly acuminate. *Stamens* 8; *anthers* unequal, the larger four twice as long as the shorter four, all curved, much acuminate and with two tubercles at the base in front, the shorter 4 with a short spur on the connective behind, the larger with no spur. *Fruit* globular-ovoid, crowned by the wide calyx-limb, .35 in. in diam.

PERAK; *Scortechini* 341; *King's Collector*, 3291, 3644, 6304, 6904; *Wray* 397; at elevations of from 3000 to 4500 feet.

This resembles *M. Horsfieldii*, Miq.,—a species from Java and Borneo—which however has 5-merous flowers, obovate petals and leaves of thinner texture. According to Scortechini the petals are waxy white tinged with red and the stamens are yellow.

VAR. *latifolia*. *Leaves* broadly elliptic, shortly acuminate, the base cuneate, 2.5 to 3.75 in. long and 1.5 to 2 in. broad.

PERAK; *King's Collector* 8017; *Wray* 268.

4. *MEDINILLA VENUSTA*, King, n. sp. Epiphytal, 2 to 4 feet long, glabrous; branches stout, with large, scattered tubercles, glabrous. *Leaves* large, opposite, thinly coriaceous, sessile, elliptic, shortly acuminate, narrowed to the base, boldly 3-nerved above the base with often a faint, small, basal, marginal pair; length 6 to 9 in.; breadth 2.75 to 4 in. *Cymes* much shorter than the leaves, laxly umbellate, axillary or from the axils of fallen leaves, about 6-flowered; the pedicels slender, bibracteolate at the base. *Flowers* nearly 1 in. long. *Calyx-tube* campanulate, .35 in. long, with a narrow, obscurely 4-toothed limb.

Petals 4, broadly ovate, acute. *Stamens* 8; *anthers* equal, linear-lanceolate, much acuminate, curved, the tubercles at the front of the base as long as the posterior basal spur from the connective. *Fruit* unknown.

PERAK; *King's Collector* 2390.

5. *MEDINILLA HASSELTII*, Blume in *Flora*, 1831, p. 513. Epiphytal on trees, 3 or 4 feet high; branches slender, terete, pale, more or less prominently warted (the warts black). *Leaves* opposite, coriaceous, oblong-lanceolate, acuminate, narrowed to the rounded base, 3-nerved, with sometimes a faint, additional lateral pair; length 4·5 to 5·5 in.; breadth 1·25 to 1·75 in.; petioles ·15 to ·35 in. *Cymes* axillary or from the axils of fallen leaves, less than half as long as the leaves, (more than half as long in *VAR. Griffithii*), broader than long; the branches divaricate, 8–12-flowered, minutely bracteolate. *Flowers* ·35 in. long. *Calyx-tube* campanulate-cylindric, somewhat constricted below the minutely 4-toothed mouth. *Petals* 4, obovate-oblong. *Stamens* 8, equal; the anthers linear-oblong, somewhat curved, the base with two short, black, conical protuberances in front and a similar one behind. *Fruit* globular, truncate, ·2 to ·25 in. in diam. *Miq. Fl. Ind. I*, pt. I, 542; *C. B. Clarke* in *Hook. fil. Fl. Br. Ind. II*, 547; *Cogn. in DC. Mon. Phan. VII*, 586. *Melastoma laurifolium* in *Wall. Cat.* 4084 (not of Blume). *Medinilla crassifolia*, *Triana* in *Trans. Linn. Soc. XXVIII*, 86 (in part).

MALACCA; *Griffith* (*Kew Distrib.*) 2282; *Maingay* (*Kew Distrib.*) 797, *Wallich* 4084. PERAK; very common. SINGAPORE; *Anderson*. SUNGAI UJONG; *Ridley* 2205, SELANGORE; *Curtis* 2334; *Ridley* 286. PANGKORE; *Curtis* 1642.

DISTRIB. Java, Sumatra.

VAR. Griffithii, *C. B. Clarke* in *Hook. fil. Fl. Br. Ind. II*, 547. *Cymes* much branched, more than half as long as the leaves, many-flowered.

MALACCA; *Griffith* (*Kew Distrib.*) 2282.

6. *MEDINILLA SCORTECHINII*, *King*, n. sp. Epiphytal, 3 or 4 feet high; stems as thick as a goose-quill, the bark brown (when dry), sparsely verrucellate. *Leaves* opposite, coriaceous, glabrous, sessile, stem-clasping, oblong-ovate to oblong, shortly acuminate, the base sub-cordate, 3-nerved, with occasionally a faint pair at the margin; length 4·5 to 6·5 in.; breadth 1·5 to 2·75 in. *Panicles* cymose, axillary, rather shorter than the leaves, very lax, spreading; the branches slender, minutely bracteolate at the divarications; the branchlets compressed, sometimes 2-winged. *Flowers* nearly ·4 in. long, on pedicels as long as themselves. *Calyx-tube* campanulate, the mouth not much

expanded, obscurely 4-toothed. *Petals* 4, oblong, acute, reflexed. *Stamens* 8; anthers curved, linear-lanceolate, with a short 1-pored apical process; the base with a short, sharp, downward-pointing spur from the connective; the bases of the anther-cells each with a linear, curved, small tubercle as long as the spur, and like it dark in colour when dry. *Fruit* ovoid-globular, .2 in. in diam.

PERAK; *Scortechini* 307, 478, 622; *Curtis* 1297; *Wray* 391, 1739; *King's Collector* 4188.

The nearest ally of this is *M. javanensis*, Bl.

7. *MEDINILLA MAINGAYI*, C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 549. A small epiphyte with slender, terete, pale, smooth branches. *Leaves* opposite, thinly coriaceous, obovate, with rounded apices and cuneate bases, obscurely 3-nerved, the lower surface rather paler than the upper when dry; length .65 to 1.25 in.; breadth .5 to .75 in.; petiole .05 to .2 in. *Cymes* much shorter than the leaves, with short, divaricate, broadly bracteolate branches, few-flowered. *Flowers* .25 in. long, their pedicels shorter. *Calyx-tube* narrowly campanulate, with a slightly expanded, minutely 4-toothed limb. *Petals* 4, lanceolate, sparsely strigose outside. *Stamens* 8; anthers lanceolate, without protuberances at the base in front, but with a short spur behind. *Fruit* unknown. Cogn. in. DC. Mon. Phan. VII, 586.

MALACCA; *Maingay* (Kew Distrib.) 806, 807. PERAK; *Wray* 3781. SINGAPORE; *Ridley* 1652, 2018. PAHANG; *Ridley* 2663.

8. *MEDINILLA CLARKEI*, King, n. sp. A small epiphyte; young branches with dark, rough, tubercled bark. *Leaves* in whorls of three or four, broadly elliptic to obovate, blunt or subacute, the base cuneate; the upper surface rugulose and green when dry, the lower pale-brown; length 1 to 2.75 in., breadth .75 to 1.8 in.; petiole .4 to .8 in., puberulous. *Cymes* about as long as the leaves or slightly longer, from the axils of fallen leaves, on slender pedicels from .5 to .75 in. long, the branches whorled, spreading, minutely bracteolate at the divisions; pedicels slender. *Flowers* 20 to 30, .3 in. in length. *Calyx-tube* cupular, the mouth truncate and usually obscurely toothed, sometimes distinctly 5-toothed. *Petals* 5, broadly ovate to rotund, blunt. *Stamens* 10; anthers linear-lanceolate; the base with two small tubercles in front, and a small spur behind. *Fruit* globular-truncate, .15 in. in diam. *M. rosea*, C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 547 (not of *Gaudichaud*).

MALACCA; *Griffith* (Kew Distrib.) 2282; *Maingay* (Kew Distrib.) 796; *Stoliczka* in Herb. Calc. PERAK; *Scortechini* 243; *Wray* 206, 412, 3331, 4084; *King's Collector* 7333; at elevations of from 3000 to 5000 feet.

M. rosea, Gaud., to which this plant has been referred in the Flora of British India, is a tetramerous species from the Marianne Islands. It has, moreover, larger flowers than this and larger, more acute leaves. This plant varies in the size of its leaves: specimens collected at the highest elevations having the largest leaves. The structure of the flowers is, however, uniform.

9. *MEDINILLA CRASSINERVA*, Blume in Flora, 1831, 510. Branches with pale bark, the older terete, the youngest striate when dry. *Leaves* in whorls of 3, coriaceous, broadly oblanceolate, or narrowly obovate, shortly and abruptly acuminate, much narrowed to the base, 3-nerved from a little above the base, occasionally with two short lateral faint nerves from the very base; length 3 to 5 in.; breadth 1.5 to 2 in.; petiole .35 to .75 in. *Flowers* in short fascicles on the stem below the leaves, in few-flowered pedunculate cymes, mixed with a few solitary, on pedicels .5 in. long. *Calyx-tube* ovoid-campanulate, the mouth truncate and almost entire. *Stamens* 10, subequal; the basal anterior processes broad and about as long as the filiform posterior spur. *Fruit* globose with a cylindric truncate mouth, .4 in. across: Blume Rumphia I, 15; Miq. Fl. Ind. Bat. I, pt. I, 545; Cogn. in DC. Mon. Phan. VII, 574. *M. macrocarpa*, Clarke (not of Blume) in Hook. fil. Fl. Br. Ind. II, 547.

SINGAPORE; Ridley 1637. PENANG; Curtis 2225. PERAK; Wray 1821. MALACCA; Maingay (Kew Distrib.) 799. DISTRIB. BORNEO.

True *M. macrocarpa*, Bl., is represented in the Kew Herbarium by a single specimen collected by Blume in the Moluccas. The flowers on it have, as described by the author of the species, an irregularly toothed calyx-limb. The plant now described differs in having an almost entire truncate limb, and I follow Cogniaux in referring it to *M. crassinervia*, Bl. In the Flora of British India it is, however, referred to *M. macrocarpa*, Bl.

10. *MEDINILLA PERAKENSIS*, King, n. sp. Epiphytal; branches terete, glabrous, tubercled. *Leaves* in whorls of 3 or 4, coriaceous, elliptic-rotund, blunt, the base rounded and narrowly cordate, glabrous; 5-nerved, the lateral pair of nerves faint; length 2.5 to 5.5 in.; breadth 1.75 to 3.75 in.; petioles .6 to 1.2 in. *Panicles* cymose, on rather long peduncles from the axils of fallen leaves, shorter than the leaves, lax, 12- to 20-flowered; branches spreading, whorled, 2-3-clotomous. *Flowers* .5 in. long, their pedicels .35 in. *Calyx-tube* cupular; the limb but little expanded, cut into 5 shallow, broad teeth. *Petals* 5, oblong. *Anthers* 10, curved, with 2 yellow tubercles at the base in front and a short spur behind from the connective. *Fruit* .35 in. in diam.; the seeds oblong, obtuse, with an excurrent tail, the testa pitted.

PERAK; Scortechini 410; Wray.

Collected only by the late Father Scortechini and Mr. Wray. According to the field-note of the former, the petals and anthers are white and the fruit blueish-

carnation. The nearest ally of this is *M. montana*, Cogn.—a New Guinea species—which has however, longer flowers, a wider calyx-tube, more slender branches which are moreover smooth, and narrower leaves narrowed at the base.

14. POGONANTHERA, Blume.

Shrubs; branches round, minutely scaly. *Leaves* opposite, petioled, oblong or ovate, entire, glabrous, 3-nerved. *Flowers* small, pulverulent, in small, terminal panicles, cymose branches. *Calyx-tube* narrowly campanulate, subquadrangular; limb 4-toothed. *Petals* 4, oblong-lanceolate. *Stamens* 8, equal; anthers oblong, acute, opening by a terminal pore, not produced at the base; connective at the base bearded behind with a tuft of hairs, not spurred. *Ovary* half-inferior, 4-celled, with a tuft of hairs at the apex; style filiform; ovules very many, placentas axile. *Berry* small, globose, 4-celled, crowned with the calyx-limb. *Seeds* very many, obovoid-oblong, smooth. **DISTRIB.** Species 2; Malayan.

POGONANTHERA PULVERULENTA, Blume in Flora, 1831, 521. An epiphytic shrub, all parts (but especially the calyx-tube) bearing pale yellow scales; the stems sparsely lenticellate. *Leaves* rather fleshy, ovate-oblong to oblong-lanceolate, acute or shortly acuminate, the base more or less narrowed and bituberculate, 3-5-nerved; the margins obscurely crenate and slightly reflexed; upper surface glabrous, the lower paler and minutely pulverulent; length 3 to 6.5 in.; breadth 1.75 to 3 in.; petiole .25 to .6 in., stout. *Panicles* terminal, 2 to 3 in. long and equally broad, cymose, the branches spreading. *Calyx-tube* sub-cylindric, constricted below the expanded 4-toothed mouth, very scaly. *Petals* 4, oblong, densely scaly externally. *Stamens* 8; anthers lanceolate, the connective with a tuft of hairs at the base behind. *Fruit* pisiform, .15 in. in diam. Korth. Verh. Nat. Gesch. Bot. t. 65; Griff. Notul. IV. 678; Miq. Fl. Ind. Bat. I, pt. I, 553; Triana in Trans. Linn. Soc. XXVIII, 89; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 550; Cogn. in DC. Mon. Phan. VII, 610. *P. reflexa*, Blume in Flora, 1831, 521; Mus. Bot. Lugd. Bat. I, 24; Naud. Ann. Sc. Nat. Ser. 3, XV, 303, tab. 15, fig. 1; Triana l.c. 89; Beccari Malesia, II, 241, tab. LIX, 4-5. *P. squamulata*, Korth. (ex Blume) Mus. Bot. I, 24. *Melastoma reflexa*, Reinw. ined. (ex Blume in Flora, 1831, 521). *M. rubicunda*, Jack in Trans. Linn. Soc. XIV, 19; Wall. Cat. 4086. *M. pulverulenta*, Jack in Trans. Linn. Soc. XIV, 19; DC. Prodr. III, 149; Blume in Bijdr., 1072.

SINGAPORE; PERAK; MALACCA; PENANG; common. **DISTRIB.** Java, Sumatra, Borneo.

I have followed Mr. Clarke in reducing *P. reflexa*, Bl. here, as I can find no tangible character to separate it. *P. reflexa* is said to have white tumid petals not toothed on the margin, while typical *P. pulverulenta* is described as having red petals with a single tooth on each margin. The union of the two species was suggested by Naudin.

15. PACHYCENTRIA, Blume.

Glabrous, often scandent shrubs, with cylindric or obscurely angled, pulverulent branches. *Leaves* somewhat fleshy, oblong or ovate-lanceolate, entire or obscurely crenulate. *Flowers* small, rose-coloured, corymbose, the pedicels 2-bracteolate, 4-merous. *Calyx-tube* ovoid or turbinate, the part beyond the ovary angular, constricted below the obscurely 4-toothed mouth. *Petals* ovate or oblong, subacute or acuminate. *Stamens* 8, equal; anthers linear-oblong or subulate, rostrate at the apex and minutely 1-pored; the connective not produced at the base, inappendiculate in front but minutely spurred at the back. *Ovary* adherent beyond its middle, 4-celled, its apex free, conic, angled; style filiform, the stigma obtuse or capitate. *Berry* globose, crowned by the limb of the calyx. *Seeds* dimidiately obovoid, the raphe lateral. **DISTRIB.** About 12 species, all Malayan.

PACHYCENTRIA TUBERCOLATA, Korth. Ver. Nat. Gesch. Bot. 246, t. 63. Epiphytic; branches as thick as a swan's quill, glabrous below but with rusty scurf near the apices, the bark pale; the roots bearing woody tubercles. *Leaves* somewhat fleshy, narrowly elliptic-oblong, subacute, narrowed at the base, the edges entire, 3-nerved; length 2.5-4.5 in.; breadth .9-1.25 in.; petioles .15-.2 in. *Panicles* terminal or axillary, pedunculate; the branches spreading, cymose, 2-2.5 in. long and as wide. *Flowers* .25 in. long, the pedicels shorter. *Calyx-tube* campanulate, the mouth truncate, obscurely 4-lobed. *Petals* 4, lanceolate. *Stamens* 8, equal, shortly spurred at the base behind. *Fruit* globular, glabrous, .15 in. in diam. Blume, Mus. Bot. Lugd. Bat. I, 23; Miq. Fl. Ind. Bat. I, pt. I, 552; Triana in Linn. Trans. XXVII, 89, tab. VII, fig. 95a.

PERAK; *King's Collector* 1707, 10569; *Wray* 3422; *Scortechini* 260, 550, 1961. SINGAPORE; *Anderson* 55. PENANG; *Curtis* 347; *Hullett* 158. **DISTRIB.** Borneo, Burma (Tenasserim, *Griffith*).

16. ASTRONIA, Blume.

Shrubs with opposite, petioled, ovate or oblong, entire, 3-nerved leaves. *Flowers* in terminal panicles, small, white or purple. *Calyx-tube* campanulate; limb irregularly truncate or 3-8-lobed. *Petals* 4-5. *Stamens* 8-10-12, equal; filaments short, broad; anthers short, obtuse,

opening by slits down the front, connective spurred at the base or unappendaged. *Ovary* inferior, 2-5-celled, glabrous at the apex; style short, stigma capitellate; ovules numerous, placentas axile, nearly basal. *Capsule* finally breaking up irregularly. *Seeds* very many, linear, raphe excurrent.—DISTRIB. Species 24; in Malaya and the Pacific Islands.

ASTRONIA SMILACIFOLIA, Triana in Trans. Linn. Soc. XXVIII, 152. Young shoots, petioles, under surfaces of the young leaves and inflorescence rufous-lepidote. *Leaves* oblong, tapering to each end, the transverse nerves stout and distant; length 3·5-5·5 in., breadth 1·5-2·5 in.; petiole ·75-1 in. *Panicle* usually terminal, condensed, 1-2 in. in diam.; branches numerous, short, the pedicels shorter than the globular, minutely 5-toothed calyx-tube. *Petals* reflexed, obovate. *Fruit* sub-globular, truncate at the apex, ·25 in. in diam. C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 550; Cogn. in DC. Mon. Phan. VII, 1094. *Melastoma smilacifolia*, Wall. Cat. 4057.

PENANG; Wallich, Curtis. MALACCA; Maingay (K.D.) 808. PERAK; Scortechini 683; Wray 2813.

VAR. *lepidophylla*, Scort. MSS. Arboreous; inflorescence, leaves on the under surface and petioles (when young) densely covered with deciduous scales.

PERAK; Scortechini 1875; King's Collector 7270, 2027.

This variety is described by Scortechini and Kunstler as a tree 50-80 feet high, the typical form never being more than a large bush.

17. PTERNANDRA, Jack.

Large shrubs or trees, glabrous or minutely pubescent. *Leaves* sub-coriaceous or coriaceous, opposite, short-petioled or sub-sessile, entire, 3-5-nerved. *Flowers* solitary and axillary on long peduncles, or in axillary or terminal, often very short, and clustered cymes; the pedicels often 2-bracteolate. *Calyx-tube* campanulate or hemispheric, tessellate, verrucose, or covered with more or less adpressed, often puberulous scales; the mouth truncate, often 4-toothed. *Petals* 4, ovate or oblong, blueish or white. *Stamens* 8, equal in length, but the anthers of some of them often imperfect, perfect anthers broad, blunt, shortly spurred behind but never in front, dehiscing by slits, the filaments stout, often geniculate. *Ovary* inferior, 4-celled: the apex glabrous, depressed or flat; style filiform; stigma clavate; ovules numerous, placentas sub-basal. *Berry* subglobose or ovoid, truncate or surmounted by the calyx-teeth, scaly or smooth. *Seeds* cuneate-ovoid, or obovoid, angular.—DISTRIB. Species about 12; in Malaya and the Philippines.

Calyx-tube tessellate outside, not covered with distinct scales 1. *P. cœrulescens.*

Calyx-tube covered with large distinct scales :—

Young branches and under surfaces of leaves rusty-pubescent; calyx-tube '2-3 in. long, covered with more or less spreading scales; teeth of calyx spreading, elongate, acuminate 2. *P. echinata.*

Young branches and under surfaces of leaves glabrous; calyx-tube '15 in. long, its scales adpressed; teeth of calyx broadly triangular, blunt, reflexed 3. *P. Griffithii.*

1. *PTERNANDRA CÆRULESCENS*, Jack in Mal. Misc. II, 61. A tree; young branches cylindric with deciduous, dark-brown, glabrous bark and slightly thickened nodes with obscure transverse ridges. *Leaves* chartaceous or sub-coriaceous, broadly ovate, ovate-lanceolate, ovate-oblong or elliptic, much narrowed at the base, the apex shortly acuminate, 3-5-nerved; both surfaces glabrous; length 2·5-5 in. (10 in. in var. 2); breadth 1·25-2·5 in., (to 5 in. in var. 2) petiole '1-2 in. *Flowers* in short, axillary, pedunculate cymes (often several from one axil), or in terminal cymes, shorter than the leaves. *Calyx-tube* cylindric-campanulate, '15 in. long, tessellate; the mouth truncate but with 4 small, erect, triangular teeth. *Petals* thick, ovate, reflexed after expansion. *Stamens* 8, equal in length; the filaments short, geniculate; perfect anthers 4 or 5, broadly ovate, blunt, shortly spurred behind, the remaining 3 or 4 imperfect, as long as but much narrower than the perfect. *Fruit* turbinate or sub-hemispheric, truncate, nearly smooth, '15-3 in. in diam. Wall. Cat. 4077; Triana in Trans. Linn. Soc. XXVIII, 153; Kurz, For. Fl. I, 509 and in Journ. As. Soc. 1877, pt. II, 79; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 551; Cogn. in DC. Mon. Phan. VII, 1103. *Ewyckia cyanea*, Blume Rumph. I. 24, t. 8; Miq. Fl. Ind. Bat. I, pt. I, 568; Triana l.c. *E. Jackiana*, Walp. Rep. V. 724. *Apteuxis trinervis*, Griff. Notul. IV, 672.—*Nov. Gen.* Roxb. Fl. Ind. II, 225.

In all the provinces except the Andaman Islands.

A common and variable plant of which four forms seem worthy of separation as varieties. These, however, pass into each other by numerous connecting specimens. One variety (*Jackiana*) differs from the typical-plant in having few-flowered almost sessile cymes; a second (*capitellata*) has sub-sessile cymes and much larger leaves and the third (*paniculata*) is probably only an example of fasciation.

VAR. 1. *Jackiana*, Clarke in Fl. Br. Ind. II, 551. *Flowers* in very short, few-flowered, almost sessile, axillary cymes. *Leaves* as in the typical form but with slightly longer petioles.

In all the provinces except the Andaman and Nicobar Islands, equally abundant with the typical form.

VAR. 2. *capitellata*, King. *Leaves* thicker in texture than in the typical form (sub-coriaceous), broadly elliptic to sub-orbicular, with 3 very strong nerves and a fainter marginal pair; length 4.5–10 in.; breadth 2.75–5 in., petiole .2–.3 in. *Flowers* in dense, very shortly-stalked, axillary glomeruli composed of numerous 3-flowered cymes very much shorter than the leaves. *Pternandra capitata*, Jack in. Mal. Misc. II, addenda prefixed to the paper p. 3; Wall. Cat. 4079; W. and A. Prodr. 325; Triana in Trans. Linn. Soc. III, 153; Kurz, For. Fl. I, 509 and in Journ. As. Soc. 1877, pt. II, 79; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 551; Cogn. in DC. Mon. Phan. VII, 1103. *Ewyckia capitellata*, Walp. Rep. V, 724; Miq. Fl. Ind. Bat. I, pt. I, 568. *E. medinilliformis*, Naud. in Ann. Sc. Nat. Ser. 3, XVIII, 261.

SINGAPORE; *Wallich* 4079. PENANG; *Curtis* 67; *King*. PERAK; *Scortechini* 43, 1043; *Wray* 1971. MALACCA; *Maingay* 802 (K.D.); *Helfer* (K.D.) 2279.

VAR. 3. *paniculata*, King. *Flowers* in large, lax, terminal, much branched, few-flowered, leafy and bracteolate panicles. *Leaves* of the stem 2–6 in. long and from .9–2.75 in. broad, those of the panicle from .75–2 in. long and .15–.8 in. broad. *P. paniculata*, Benth. in Wall. Cat. 4080; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 551; Cogn. in DC. Mon. Phan. VII, 1104. *Ewyckia latifolia*, Blume Mus. Bot. I, 6. *E. cyanea*, var. *latifolia*, Korth. ex Miq. Fl. Ind. Bat. I, pt. I, 568. *E. paniculata*, Miq. l.c. Suppl. 321. *Pternadra latifolia*, Triana in Linn. Trans. XXVIII, 153.

PENANG; *Wallich* 4080; *Curtis* 2768. MALACCA; *Griffith* (K.D.) 2273. PERAK; *Scortechini* 248, 1303; *Wray* 92. DISTRIB.; Borneo, Bangka.

2. *PTERNANDRA ECHINATA*, Jack, Mal. Mis. II, n. 9 and add. prop. 3. A small tree; young branches quadrangular, thickened and with transverse ridges at the nodes, minutely rusty-pubescent. *Leaves* sub-coriaceous, boldly 3-nerved, lanceolate or oblong-lanceolate, 3-nerved, narrowed to the base, shortly acuminate at the apex; upper surface glabrous; the lower puberulous or sub-glabrous, minutely reticulate; length 2.5–4.5 in.; breadth .75–1.75 in.; petiole .05–.2 in. *Flowers* axillary and solitary on pedicels longer than themselves, or in threes in terminal pedunculate cymes, the pedicels of both sets of flowers with one or more pairs of curved, linear-oblong bracteoles. *Calyx-tube* widely campanulate, .2–.3 in. long, closely covered with triangular rusty-pubescent scales, those nearest the mouth longest, most acute, and most persistent; the mouth truncate and with 4 narrow, acuminate teeth. *Petals* broadly ovate-quadrate, abruptly and shortly acute, the edges undulate, blue. *Anthers* broadly ovate, on thick short filaments.

Fruit sub-hemispheric, truncate, sub-echinate, .35 in. in diam. Wall. Cat. 4078. *Kibessia echinata*, Cogn. in DC. Mon. Phan. VII, 1108. *Kibessia simplex*, Korth. Verh. Nat. Gesch. Bot. 253; Blume, Mus. Bot. I, 9; Triana in Trans. Linn. Soc. XXVIII, 152; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 552. *Kibessia cupularis*, Dcne in Deless. Ic. Sel. V, t. 5; Ann. Sc. Nat. Ser. 3, XV, 317. *K. acuminata*, Dcne in Ann. Sc. Nat. Ser. 3, V, 316; Triana in Trans. Linn. Soc. XXVIII, 153.

MALACCA and SINGAPORE; not uncommon; many collectors.

I cannot see how *K. acuminata*, Dcne, is to be distinguished as a species and I reduce it here without any hesitation.

VAR. *pubescens*, King. Bases of leaves somewhat rounded and sub-cordate; young branches, under surfaces of leaves and panicles with much minute rusty pubescence. *P. echinata*, Jack, Wall. Cat. 4078a. *Kibessia pubescens*, Dcne in Ann. Sc. Nat. Ser. 3, V, 318; Triana in Linn. Trans. XXVIII, 152; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 552; Cogn. in DC. Mon. Phan. VII, 1108.

PENANG, MALACCA, PERAK.

I cannot see what claim this has to specific rank. To me it appears to be a variety and not a very distinct one of *P. echinata*, Jack. Wallich did not even regard it as a variety and issued it as true *P. echinata*. This form, in the three provinces where it occurs, appears to be very common.

3. *PTERANDRA GRIFFITHII*, King, n. sp. A small tree; young branches cylindric, very little thickened at the nodes, glabrous. *Leaves* thinly coriaceous, elliptic to ovate-oblong, narrowed at the non-cordate (cordate in var.) base, the apex very shortly acuminate or acute, 3-nerved; both surfaces glabrous, shining; length 2.25–4 in.; breadth 1–2 in.; petiole .15–.2 in. *Flowers* in 2–3- rarely 5–7-flowered, axillary, bracteolate cymes shorter than the leaves, rarely in crowded, terminal cymes; bracteoles ovate, acute, minute. *Calyx-tube* widely campanulate, .15 in. long, covered with adpressed, triangular, puberulous scales; the mouth with 4 large, blunt, triangular teeth. *Petals* orbicular-ovate, undulate, abruptly and shortly apiculate-spreading, not calyptrate. *Stamens* 8, equal; the anthers short, thick, about as long as the filaments, gibbous at the base behind, inserted at an obtuse angle on the filaments. *Fruit* globular-ovoid, truncate at the mouth, covered by the persistent scales, under .2 in. in diam.

MALACCA; *Griffith* (K.D.) 2272/1; PENANG; *Curtis* 953.

Griffith's specimens of this (2272/1) have been referred by M. Cogniaux (DC. Mon. Phan. VII, 1110) to *Rectomitra tuberculata* Bl., but comparison in the Kew Herbarium with two authentic specimens of that plant collected in Sumatra and

issued from the Leiden Herbarium shew that this differs from Blume's plant. Specimens of this were originally collected by Griffith in 1845, and as none had been gathered until Curtis's in 1886, the species is presumably a rare one.

VAR. *cordata*, King. Leaves with cordate bases.

PENANG; Curtis 453. PERAK; Wray 1994.

18. MEMECLON, Linn.

Shrubs or trees, glabrous. *Leaves* opposite, short-petioled or sessile, coriaceous or sub-coriaceous, orbicular, ovate or lanceolate, entire, pinnate-nerved or rarely 3-nerved. *Flowers* usually in small, axillary, rarely terminal, simple or paniced cymes or umbels. *Calyx-tube* campanulate, glabrous; limb dilated, truncate or shortly 4-lobed. *Petals* 4, blue or white, rarely reddish. *Stamens* 8, equal, filaments long; anthers short, opening by slits in front, connective ending in a horn behind. *Ovary* inferior, 1-celled; apex glabrous, surmounted by a convex or depressed disc with 8 radiating grooves; style filiform, simple; ovules 6-12, whorled on a free-central placenta. *Berry* globose or ellipsoid, crowned with the calyx-margin, 1-seeded. *Seed* large, cotyledons convolute.—**DISTRIB.** Species about 130; numerous in South-East Asia and its islands; a few extending into Polynesia and Australia, several in tropical Africa.

Leaves boldly 3-nerved from base to apex 1. *M. oligoneuron*.

Leaves with pinnate nervation, sessile or subsessile:—

Main nerves of leaves distinctly visible when dry, inter-
arching but not forming (except in No. 3) a bold intra-
marginal nerve; leaves thinly coriaceous or membranous,
small, not exceeding 4 in. in length:—

Young branches boldly 4-angled or winged; inflores-
cence very shortly stalked (the stalk not manifest):—

Young branches 4-winged:—

Cymes solitary, 3- or 4-flowered; leaves narrowly
lanceolate, 6 to 1 in. broad 2. *M. epiphyticum*.

Cymes solitary, 8- to 10-flowered; leaves ovate- or
oblong-lanceolate, 1.35 to 1.85 in. broad 3. *M. fruticosum*.

Cymes several from the same axil, compoundly
umbellate, 1.5 to 2.5 in. long, many-flowered,
pubescent; leaves elliptic much narrowed to each
end 4. *M. pubescens*.

Young branches 4-angled, never winged and some-
times sub-terete:—

Cymes 3- to 5-flowered: leaves lanceolate, 1 to 2
in. broad 5. *M. dichotomum*.

Young branches terete; inflorescence with a manifest
peduncle 6. *M. Kunstleri*.

Main nerves of leaves distinct when dry, prominent on the lower surface and anastomosing with a bold intra-marginal line, coriaceous, more than 4 in. long:—

Inflorescence manifestly pedunculate:—

- Peduncles several in each axil, many-branched; fruit ellipsoid 7. *M. caloneuron*.
 Peduncles solitary, few-branched; fruit globular ... 8. *M. Hullettii*.

Inflorescence sessile or on a very short peduncle:—

- Flowers large, the mouth of the calyx '2 in. in diam.:—
 Arboreous; leaves sub-acute; flowers in fascicles of 12 to 20, their pedicels '15 in. long, stout; calyx truncate, not toothed 9. *M. Maingayi*.
 Shrubby; leaves acuminate; cymes 3- or 4-flowered; pedicels '4 in. long, slender; calyx-limb 4-toothed 10. *M. Kurzii*.

Flowers small; mouth of the calyx under '2 in. in diam.:—

- Leaves slightly narrowed or rounded at the base, rarely minutely sub-cordate:—
 Young branches not winged below the nodes; main nerves of leaves 18 to 20 pairs; fruit '7 in. in diam. 11. *M. heteropleurum*.
 Young branches with 4 short wings below each node (sometimes obscure); main nerves 12 to 14 pairs; fruit '35 in. in diam. 12. *M. costatum*.
 Leaves distinctly cordate at the base and quite sessile, amplexicaul 13. *M. amplexicaule*.

Main nerves of leaves indistinct on both surfaces when dry; leaves coriaceous or thinly so:—

Leaves with broad cordate bases, sessile, amplexicaul:—

- Branches terete, fruit large, globular 14. *M. microstomum*.
 Branches 4-angled; fruit ellipsoid 15. *M. coeruleum*.

Leaves much narrowed at the base, never cordate, petiolate:—

Inflorescence in axillary glomeruli or in very shortly-peduncled (not manifest) cymes:—

Mouth of calyx entire in the expanded flower:—

- Flowers in fascicles, their pedicels slender; leaves often 4 in. long; leaves brown underneath when dry 16. *M. campanulatum*.
 Flowers in short umbellate sub-sessile cymes; young branches bi-sulcate: fruit globular; leaves pale yellowish underneath when dry ... 17. *M. minutiflorum*.

Mouth of calyx 4-toothed:—

- Teeth of calyx long, sharp, its fundus narrowed; flower buds narrowly conical; cymes many-flowered; fruit globular, '2 in. in diam.; leaves shortly acuminate, 1'5 to 2'5 in. long ... 18. *M. myrsinoides*.
 Teeth of calyx short, acute, its fundus narrow; cymes few-flowered, fruit globular, '3 in. in diam.; leaves very acuminate, 2 to 2'5 in. long... 19. *M. laevigatum*.

Teeth of calyx short, acute, its fundus rounded ;
 fruit globular, .25 in. in diam. ; flower pedicels
 with acicular bracteoles ; leaves much acuminate,
 2.8 to 5.5 in. long 20. *M. cinereum.*

Inflorescence manifestly pedunculata :—

Fruit ellipsoid :—

Young branches terete ; calyx-limb truncate ;
 leaves elliptic-oblong or elliptic, 2.5 to 4.75 in.
 long 21. *M. oleaeifolium.*

Fruit globular :—

Branches 4-angled :—

Leaves rhomboid or elliptic-rhomboid ; inflorescence under .5 in. long ; calyx saucer-shaped with wide, minutely 4-toothed mouth ; fruit .2 in. in diam. 22. *M. pauciflorum.*

Leaves oblong to elliptic, much tapered to each end ; inflorescences 1 in. or more in length, several in each axil ; calyx with narrow fundus, the mouth wide (.1 in.) and obscurely 4-toothed ; fruit .5 in. in diam. 23. *M. elegans.*

Branches terete :—

Mouth of calyx with 4 broad, shallow teeth ; flowers 4 to 6 in a compound umbel ; fruit .25 in. in diam. ; leaves caudate-acuminate 24. *M. acuminatum.*

Mouth of calyx truncate or with 4 obscure teeth :—

Cymes many-flowered, on peduncles not longer than the leaf-petioles ; calyx with wide, obscurely toothed mouth and narrow, cup-shaped tube ; young branches not bi-sulcate 25. *M. garcinoides.*

Cymes or peduncles very slightly if at all longer than the petioles ; calyx not toothed ; young branches deeply bi-sulcate under the nodes 26. *M. andamanicum.*

Cymes or peduncles several times longer than the leaf-petioles :—

Peduncles solitary ; leaves thinly coriaceous 27. *M. intermedium.*

Peduncles several from the same axil ; leaves coriaceous 28. *M. edule.*

1. MEMECYLON OLIGONEURON, Blume, Mus. Bot. I, 354. A small tree or shrub ; young branches slender, terete, their bark pale-brown. *Leaves* thinly coriaceous, brown below, greenish brown above when dry, oblong to ovate- or elliptic-oblong, shortly and obtusely acuminate, boldly 3-nerved from the cuneate base, transverse nerves invisible ; length 2-4 in. ; breadth 1.3-1.65 ; petiole .05-.15 in. *Flowers* small

(.05 in. long), on pedicels about .1 in. long, densely crowded in clusters on small tubercles in the axils of leaves or of fallen leaves. *Calyx-tube* cupular, but little contracted at the base, the mouth wide with four broad shallow teeth. *Fruit* unknown. Miq. Fl. Ind. Bat. I, pt. 1, 574; Cogn. in DC. Mon. Phan. VII, 1132. *M. trinerve*, Hassk. Cat. Hort. Bog. 259 (not of DC.). *Myrtus oligoneura*, Korth. ex Blume l.c. 354.

PERAK; *Scortechini* 1309; *King's Collector* 2513, 10280. PENANG; *Curtis* 1065, 1446, 2220, 10920. DISTRIB. Java, Borneo.

A species easily recognised by its 3-nerved leaves.

2. MEMEYCLON EPIPHYTICUM, King, n. sp. An epiphytic shrub; branches rather stout, strongly angled and with short ear-like projections just below the nodes. *Leaves* thinly coriaceous, narrowly oblong-lanceolate, acute or acuminate, somewhat narrowed to the rounded sub-cordate base; main nerves 9 or 10 pairs, indistinct on the lower surface, invisible on the upper; length 1.75–3 in.; breadth .6–1 in.; petiole .05 in. *Cymes* in pairs, axillary, 3–4-flowered, on slender pedicels .1–.15 in. long, bracteate at the apex; pedicels half as long as the peduncle. *Calyx-tube* cupular, rounded at the base; the mouth deep and wide (.05 in. across), undulate, truncate. *Fruit* globular, smooth, .25 in. in diam.

PERAK; on trees, *King's Collector* 5184; *Wray* 2727.

A species allied to *M. dichotomum*, Clarke, but with smaller leaves, more boldly angled branches, smaller, less numerous flowers, and cymes on more slender peduncles.

3. MEMEYCLON FRUTICOSUM, King, n. sp. A shrub, 6–8 feet high; young branches boldly 4-winged especially near the slightly thickened nodes, the bark pale-brown. *Leaves* ovate-lanceolate or oblong-lanceolate, chartaceous, shortly acuminate, slightly narrowed to the rounded base; main nerves 7–9 pairs, interarching .15 in. from the margin, somewhat conspicuous on the lower but indistinct on the upper surface; length 3–4 in.; breadth 1.35–1.85 in.; petiole .05 in. *Cymes* usually in pairs, axillary, on short peduncles, 8–10-flowered. *Flowers* on pedicels with acute bracteoles at their bases. *Calyx-tube* shortly campanulate, tapering much to the base (obconic), the mouth .075 in. wide, with 4 shallow obscure teeth, or truncate; the buds not very conical. *Fruit* globose-ovoid, constricted below the thick persistent calyx-limb, .35 in. long and .25 in. in diam. (unripe).

PERAK; *King's Collector* 2971, 3265, 3425.

Approaching *M. dichotomum* and *M. sub-dichotomum* but with differently shaped fruit.

4. MEMEYCLON PUBESCENS, King. A tree, 30–70 feet high; young branches somewhat slender, pale-brown, 4-angled. *Leaves* coriaceous,

elliptic, shortly and abruptly acuminate, the base much narrowed; yellowish green on the lower surface and olivaceous on the upper when dry; main nerves 7–10 pairs, quite distinct on the lower surface, less so on the upper, curved and interarching .1 in. from the margin. *Cymes* 1–3 from the axils of leaves, often unequal, proliferously umbellate, from 1.5–2.5 in. long, always pedunculate, the peduncle and all its branches 4-angled, bracteolate at the divisions, sparsely and deciduously rusty-pubescent. *Flowers* densely clustered at the apices of the thickened secondary peduncles, pedicellate; the pedicels with numerous sharply acuminate bracteoles at their bases. *Calyx-tube* campanulate, much narrowed at the base, the mouth rather more than .05 in. wide, truncate but with 4 minute, acicular teeth. *Fruit* globular, .15 in. in diam. (unripe). *M. grande*, Retz., var. *pubescens*, Clarke in Hook. fil. Fl. Br. Ind. II, 558; Cogn. in DC. Mon. Phan. VII, 1153.

MALACCA; *Griffith* (Kew Distrib.) 2336. PERAK; *King's Collector* 6089, 10760. SINGAPORE; *Ridley* 10390.

Ripe fruit of this is unknown.

5. MEMECLON DICHOTOMUM, C. B. Clarke in Herb. Kew. A slender shrub, 6–8 feet high; young branches slender, acutely 4-angled (even 4-winged) below the slightly thickened nodes; the bark pale-brown. *Leaves* thinly coriaceous, almost sessile, lanceolate to ovate-lanceolate, much acuminate, often caudate; the base rounded or slightly narrowed; main nerves 6–8 pairs, curved, interarching rather far from the margin, often indistinct; length 2.5–4 in.; breadth 1–2 in.; petiole very short (under .05 in.). *Cymes* 2–5-flowered, solitary, axillary and terminal; peduncles very short, 4-angled; pedicels with two ovate, acute bracteoles at their apices embracing the calyx. *Calyx-tube* campanulate, tapering to the base (obconical); minutely glandular outside when dry, the mouth with 4 broad, shallow lobes when young, truncate and almost entire when old; buds rather large, conical. *Fruit* globular, crowned by the narrow calyx-limb, smooth when ripe, about .5 in. in diam. *M. elegans*, var. *dichotoma*, C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 554; Cogn. in DC. Mon. Phan. VII, 1138.

MALACCA; *Griffith* (Kew Distrib.) 2324; *Maingay* (K.D.) 818, 820. PERAK; *Wray* 2989; *King's Collector* 3239, 5036, 5297, 10783. PAHANG; *Ridley* 2609.

I restore for this species the MS. name originally given to it by Mr. C. B. Clarke in the Kew Herbarium. Mr. Clarke subsequently reduced it, as a variety, to *M. elegans*, Kurz, of which there were, at the time he made the reduction, no good specimens. Now that there are excellent examples of *M. elegans*, it is clear that *M. dichotomum* is not near that species.

There are specimens in the Calcutta Herbarium of what appear to be other species allied to this. But the material of all is imperfect and I describe none of them.

6. MEMECYLON KUNSTLERI, King, n. sp. A tree, 40–60 feet high; young branches slender, terete, very pale-grey. *Leaves* chartaceous, drying brown (palest on the lower surface), elliptic-oblong, bluntly acuminate, the base rounded and often minutely cordate; main nerves 7 or 8 pairs, ascending, faint on the lower and almost invisible on the upper surface when dry; length 2·75–4·5 in.; breadth 1–2 in.; petiole ·05–·1 in. *Peduncles* from the axils of fallen leaves or axillary, bracteolate, ·35–·6 in. long, umbellately paniced, bracteolate at the divisions, 4-angled like the pedicels; ultimate umbels 4–6-flowered, on the thickened ends of the secondary peduncles, pedicels bracteolate at the base. *Calyx-tube* cup-shaped, shallow, the mouth obscurely 4-toothed. Young fruit ellipsoid, crowned by the thick, shallow, obscurely 4-toothed limb of the calyx, ·3 in. long, and ·15 in. in diam.

PERAK; *King's Collector* (Kunstler) 8195, 10419.

This is known only by Mr. Kunstler's two suites of specimens. One of these sets bears no fruit; the other no flowers. The leaves on the former are rather smaller than those on the second but the venation is the same and I assume that they belong to one species. The terete branchlets, associated as they are with an inflorescence which is 4-angled in all its branches, even down to the pedicels and the ellipsoid fruit, distinguish the plant.

7. MEMECYLON CALONEURON, Miq. Fl. Ind. Bat. Suppl. 321. A tree; branchlets and leaves as in *M. costatum*, Miq., but the latter with fewer nerves. *Flowers* in axillary, pedunculate, many-branched cymes, 1–2 in. long, the flowers in dense glomeruli on the thickened apices of the ultimate branchlets; all the peduncles boldly 4-angled or winged; fruit ellipsoid, ·35 in. long (including the small persistent calyx-limb). *M. costatum*, Miq., var. *ellipsoidea*, Blume Mus. Bot. I, 361; Cogn. in DC. Mon. Phan. VII, 1136.

MALACCA; *Maingay* (Kew Distrib.) 813. PERAK; *Wray* 3235; *King's Collector* 6945, 8505. DISTRIB. Java; Sumatra, *Forbes* 2696; Borneo.

The inflorescence and fruit are so different from those of *M. costatum*, Miq., that I have followed Miquel in treating this as a species. Miquel did not however, recognise that his *M. caloneuron* really covers Blume's variety *ellipsoidea* of his own species *M. costatum*.

8. MEMECYLON HULLETHII, King, n. sp. Young branches slightly ridged near the nodes, otherwise terete, the bark pale-brown. *Leaves* chartaceous, ovate-oblong, gradually narrowed to the acuminate apex; the base broad, abruptly rounded, slightly cordate; main nerves about 15 pairs, thin but distinct on the lower surface, horizontal; length 6–8 in.; breadth 2·25–3 in.; petiole under ·1 in. *Peduncle* solitary, axillary, 1·5–2·5 in. long, slender, bearing at its apex a single or compound

few-flowered umbel; the flower-pedicels longer than the calyx and, like the peduncles of the secondary umbels, rugulose. *Calyx-tube* campanulate, narrowed to the base; the mouth truncate, with 4 very obscure shallow teeth. *Fruit* globular, crowned by the rather large calyx-limb, .25 in. in diam. (not quite ripe).

JOHORE; on Gunong Pulai, *Hullett* and *King* 253; *Lake* and *Kelsall* 4073.

A very well-marked species near *M. amplexicaule*, Roxb., at once distinguished by its elongately acuminate, broad-based leaves and long-peduncled umbels.

9. MEME CYLON MAINGAYI, Clarke in Hook. fil. Fl. Br. Ind. II, 557. A tree, 20–40 feet high; branches stout, terete, somewhat thickened at the nodes, the bark pale-brown when dry. *Leaves* coriaceous, nearly sessile, elliptic-oblong, sub-acute, slightly narrowed to the rounded, sometimes slightly cordate base; in length 6.5–9 in.; breadth 3–4.25 in.; main nerves 12–15 pairs, not very prominent, interarching inside the margin. *Flowers* large for the genus, in few-flowered (12–20) fascicles from the axils of the leaves or of fallen leaves; peduncles and pedicels about .15 in. long, bracteolate. *Calyx-tube* widely cupular, truncate, toothless, .2 in. in diam. when dry. *Petals* obtuse in bud. *Fruit* unknown. Cogn. in DC. Mon. Phan. VII, 1139.

: MALACCA; *Maingay* (Herb. prop.) 1422. PERAK; *King's Collector* 4726.

An arboreal species with large flowers and thick branches, allied to *M. amplexicaule* but well distinct.

10. MEME CYLON KURZII, King. A glabrous shrub; young branches terete, swollen under the nodes, the bark pale when dry. *Leaves* thinly coriaceous, sub-sessile, ovate-oblong, shortly acuminate, slightly narrowed to the rounded base; main nerves 15–20 pairs, rather straight, interarching .25 in. from the margin, faint; length 8.5–10 in.; breadth 3.25–4.5 in.; petiole about .1 in. long, stout. *Flowers* large, on slender bi-bracteolate pedicels .4 in. long; the cymes 3- or 4-flowered, from the axils of fallen leaves, solitary or several together; peduncle short (only .15 in. long). *Calyx-tube* campanulate, .2 in. long; the mouth .2 in. wide, wavy and with 4 broad teeth. *Fruit* ellipsoid, somewhat curved, .75 in. in length (including the persistent limb of the calyx) and .4 in. in diam. *M. subtrinervium*, Miq., var. *grandiflora*, Kurz in Journ. As. Soc. Beng. 1876, pt. II, 131; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 565; Cogn. in DC. Mon. Phan. VII, 1143.

NICOBAR ISLANDS; *Kurz*, *King's Collector* 509.

The leaves of this when dry are pale-brown on the upper and pale-olivaceous on the lower surface. They are different in shape from those of *M. subtrinervium*, Miq., of which Kurz makes this a variety. The flowers of the latter are moreover small and in slender pedunculate cymes.

11. MEMECYLON HETEROPLEURUM, Blume, Mus. Bot. Lugd. Bat. I, 362. A tree, 30 and 40 feet high; young branches rather slender, terete, the bark pale-brown or cinereous when dry. *Leaves* thinly coriaceous, broadly oblong-lanceolate or elliptic-oblong, shortly and rather bluntly acuminate, the base rounded or narrowed, not cordate, shortly petiolate, pale-brown with sometimes a touch of green on both surfaces when dry; main nerves 18–20 pairs, straight, interaching close to the margin, thin but very distinct on the lower surface when dry; length 5–7 in. rarely 10 in.; breadth 2–3·5 in.; petiole only ·1 in. *Flowers* pointed in bud, in dense cymes from the axils of the leaves or from those of the old leaves; the peduncle ·25 in. long; pedicels shorter, bi-bracteolate. *Calyx-tube* widely cupular, narrowed to the base, truncate, ·1–1·5 in. in diam. when dry. *Fruit* globular, ·5 in. in diam. Miq. Fl. Ind. Bat. I, pt. I, 579; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 557; Cogn. in DC. Mon. Phan. VII, 1140.

MALACCA; *Griffith* 2337 (Kew Distrib.); *Maingay* (K.D.) 816. PENANG; *Curtis* 814. SINGAPORE and SELANGORE; *Ridley*. PERAK; *King's Collector*, *Wray*, *Scortechini*: many Nos.; common. DISTRIB. Sumatra and Borneo.

VAR. *olivacea*, King. Leaves rounded at the base, large, 10–14 in. long and 3·5–4·25 in. broad, with a strong olivaceous tint when dry; fruit not seen.

PERAK; *King's Collector* 500, 2778, 10872; *Wray* 1310.

This variety differs (as far as it is represented by dried specimens) from typical *M. heteropleurum*, Bl., only in the size of its leaves and their colour when dried; fruit of it is unknown, the flowers and shape of leaves are exactly those of the type.

12. MEMECYLON COSTATUM, Miq. in Verh. Ned. Inst. 1850, p. 29. A tree, 30–60 feet high; young branches terete, but with 4 short wings below the nodes. *Leaves* thinly coriaceous (drying pale-brown with a tinge of yellowish-green), oblong- or oblong-lanceolate, sometimes oblong-ovate, shortly acuminate, the base rounded or slightly narrowed, not cordate, penni-nerved; the main nerves 12–14 pairs, stout, curved, anastomosing at ·25 in. from the margin with a bold lateral nerve; length 4·5–7·5 in.; breadth 1·75–3 in.; petiole very short, stout. *Flowers* crowded in axillary glomeruli, 1 in. or less in diameter; their pedicels short (·1–0·5 in.), the bracteoles minute, triangular. *Calyx* cup-shaped, truncate, slightly narrowed at the base. *Petals* ·2 in. in diam. *Fruit* globose, ·35 in. in diam. Miq. Fl. Ind. Bat. I, pt. I, 573; Triana in Linn. Trans. XXVIII, 157; Blume, Mus. Bot. I, 360; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 558; Cogn. in DC. Mon. Phan. VIII, 1136. *M. grande*, Bl. Bijdr. 1095 (not of Retz.).

PERAK; *King's Collector* 10785. DISTRIB.; Java, Sumatra (*Forbes* 1442).

13. MEMECYLON AMPLEXICAULE, Roxb. Fl. Ind. II, 260. A shrub, 8–12 feet high; branches rather slender, terete between, but 4-angled and sometimes 4-winged below the nodes. *Leaves* (tinged with greenish-yellow when dry) sessile or nearly so, often semi-amplexicaule, ovate-oblong or ovate-lanceolate, sub-acute or shortly and bluntly acuminate, broadest a little above the cordate base, penni-nerved; the main nerves 9–12 pairs, not prominent, interaching inside the margin; length 3·5–6 in.; breadth 1–2·5 in. *Flowers* 2 in. long, crowded in dense, axillary glomeruli 1 in. or less in diameter; their pedicels very short (lengthened to 25 in. in fruit) and with minute bracteoles. *Calyx* campanulate, truncate, much narrowed to the base. *Petals* sub-rotund, 2 in. in diam. *Fruit* globose, 3 in. in diam. Wight Ic. 279. Naud. in Ann. Sc. Nat. Ser. 3, XVIII, 277; Miq. Fl. Ind. Bat. I, pt. I, 580; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 559 (in part); Cogn. in DC. Mon. Phan. VII, 1139 (in part). *M. depressum*, Benth. in Wall. Cat. 4101 (in part); Triana in Linn. Trans. XXVIII, 158 (in part). *M. cordatum*, Wall. Cat. 4100 (in part). *M. coeruleum*, Triana in Linn. Trans. XXVIII, 158 (in part).

In all the Provinces except the Andaman and Nicobar Islands; common.

The petals of this are white tinged with pink. The plant described by Roxburgh under the name *M. amplexicaule* is a Malayan one, as he distinctly states. The species from the South of India which has, in most of the synonyms above quoted, been treated as identical with this is, in my opinion, quite distinct. It has smaller and proportionately broader leaves, and the flowers, which are smaller and more numerous, are in fascicles from the axils of fallen leaves. This is allied to *M. costatum*, and like it, this has the stems often 4-winged below the nodes; the leaves are also sessile or nearly so, but they differ from those of *M. costatum* in invariably being cordate at the base.

14. MEMECYLON MICROSTOMUM, Clarke in Hook. fil. Fl. Br. Ind. II, 557. A tree, 40–70 feet high; branches terete, rather slender, dark greyish-brown when dry. *Leaves* very coriaceous, sessile and almost amplexicaul, oblong or narrowly elliptic, sub-acute or obtuse, the base rounded and slightly cordate, very opaque, the nerves very indistinct; length 3·25–4·5 in.; breadth 1·3–2 in. *Flowers* numerous, small, less than 1 in long (excluding the exerted stamens), crowded in dense axillary glomeruli, pedicels filiform. *Calyx-tube* infundibuliform, constricted in its lower third, the mouth wide truncate. *Petals* pale yellowish-green. *Fruit* large (6 in. in diam.), globular, the persistent calyx-limb small. Cogn. in DC. Mon. Phan. VII, 1147.

MALACCA; *Maingay* (Kew Distrib.) 821; PERAK; *Wray* 1137; *King's Collector* 10588. SINGAPORE; *Ridley* 2033. PENANG; *Curtis* 766.

The leaves of this, when dry, are olivaceous on the upper and pale-brown on the lower surface. The species resembles *M. amplexicaule* but differs notably in its large globular fruit.

15. *MEMECYLON COERULEUM*, Jack. in Mal. Misc. I, 26. A shrub, 5-15 feet high; branchlets often 4-angled near the apices, otherwise terete, slender, the bark pale-brown when dry. *Leaves* sessile, coriaceous, opaque, oblong or ovate-oblong, obtuse or sub-acute, broadest a little above the rounded, cordate base, the midrib distinct but the main nerves faint and the reticulations obsolete; length 2.5-4.75 in.; breadth 1-2.5 in. *Flowers* rather numerous, in dense, axillary, condensed glomerulate cymes, the peduncle .25 in. long, the pedicels shorter than the flowers, each with two broad, acute bracteoles. *Calyx-tube* short, widely campanulate, narrowed to the base, the mouth wide truncate. *Petals* conical in bud. *Fruit* narrowly ellipsoid, .4 in. long and .25 in. in diam. (including the deep, persistent calyx-limb). Miq. Fl. Ind. Bat. I, pt. I, 580; Triana in Linn. Trans. XXVIII, 158 (excl. syn. *M. amplexicaule*, Roxb.); Kurz, For. Flora B. Burma I, 511; C. B. Clarke in Hook. fil. Fl. Br. Ind. I, 559; Cogn. in DC. Mon. Phan. VII, 1163. *M. grande*, Smith in Rees' Cyc. XXIII (not of Retz). *M. cordatum*, Wall. Cat. 4100 (partly); Griff. Not. IV, 673. *M. manillanum*, Naud. in Ann. Sc. Nat., Ser. 3, XVIII, 276; Miq. l.c. 576. *M. lutescens*, Presl. Epim. Bot. 208 (not of Naud.).

In all the provinces; not uncommon. **DISTRIB.** Philippines.

16. *MEMECYLON CAMPANULATUM*, Clarke in Hook. fil. Fl. Br. Ind. II, 563. Young branches rather slender, terete, their bark pale-brown. *Leaves* coriaceous, elliptic, sometimes with a short blunt apical point, the base always much and abruptly narrowed, nerves invisible; length 3-4.5 in.; breadth 1.25-2.2 in.; petiole .1-1.5 in. *Flowers* on slender pedicels, .1-1.5 in. long, bracteolate at the base and crowded in dense fascicles in the axils of the leaves or of the fallen leaves, the buds of the petals shortly conical. *Calyx-tube* campanulate, blunt at the base and somewhat contracted below the wide truncate limb. *Fruit* unknown. Cogn. in DC. Mon. Phan. VII, 1162.

MALACCA; *Griffith* (Kew Distrib. 2325).

In its leaves this much resembles *M. oleafolium*, Bl., but the flowers of that species are in lax, few-flowered, pedunculate umbels, whereas the flowers of this are in dense, epedunculate fascicles.

17. *MEMECYLON MINUTIFLORUM*, Miq. Fl. Ind. Bat. Suppl., 323. A tree, 30-70 feet high; young branches slender, with a broad, angularly margined groove on each side; the bark pale, smooth. *Leaves* thinly coriaceous, drying yellowish-green beneath, narrowly elliptic, cordate-acuminate, the base much narrowed; main nerves very indistinct.

Inflorescence twice as long as the petioles, many-flowered; the peduncles often two or three from the same axil, each bearing several 2-4-flowered umbels; pedicels stout, bracteolate at the base. *Calyx-tube* cup-shaped, not tapered to the base, the mouth expanded, truncate and .05 in. wide, glandular-hairy when young like the bluntly conical petal-bud and the pedicels. *Fruit* crowned by the minute calyx-limb, depressed globular, smooth, .35 in. in diam. and .3 in. deep. Cogn. in DC. Mon. Phan. VII, 1169. *M. acuminatum*, Sm., var. *flavescens*, Clarke in Hook. fil. Fl. Br. Ind. II, 562; Cogn. in DC. Mon. Phan. VII, 1152.

MALACCA; *Griffith* (Kew Distrib.) 2325/2. PENANG; *Curtis* 815. PERAK; *King's Collector* 5027, 6105, 6265, 8724. DISTRIB. Sumatra.

Triana considers this a distinct species and I think he is right. *Fruit* however is wanting to complete our knowledge of the form. The Perak specimens agree perfectly with the type sheet named *M. minutiflorum*, Miq., in Herb. Calcutta. The species is not, as was suggested by Kurz, identical with *M. lilacinum*, Zoll. and Moritzi.

18. MEMEYCLON MYRSINOIDES, Blume, Mus. Bot. I, 356. A tree, 30-40 feet high (rarely a shrub); young branches terete, slender, with pale-grey bark. *Leaves* thinly coriaceous, drying brown (palest on the lower surface), narrowly elliptic or ovate-lanceolate, the apex very acuminate, much narrowed to the cuneate base; main nerves invisible on both surfaces; length 1.5-2.5 in.; breadth .9-1.25 in.; petiole .15-.25 in. *Flowers* numerous, in very short-peduncled cymes, densely clustered together in the same axil; pedicels about the length of the calyx, bracteolate at the base. *Calyx-tube* campanulate, much narrowed to the base, the mouth less than .05 in. wide, with 4 long (for the genus) acute teeth; *petals* in bud forming a long narrow cone, acuminate. *Fruit* globular, the size of a grain of black pepper. Miq. Fl. Ind. Bat. I, pt. I, 577; Triana in Linn. Trans. XXVIII, 158 (excl. syn.); Cogn. in DC. Mon. Phan. VII, 1160; excl. syn. *M. lilacinum*. *M. capitellatum*, Blume, Bijdr. 1091 (not of Linn.).

PENANG; *Curtis* 2219. JOHORE; *Ridley* 2026. PERAK; *Wray* 2258; *King's Collector* 1851, 3517, 5923, 8828. DISTRIB.; Sumatra; *Forbes* 2953; Java; Bangka.

VAR. *lilacina*, King. Young branches with two deep, sharply-margined grooves; leaves broadly elliptic, yellowish on the under surface when dry, cymes not crowded (only two in an axil). *M. lilacinum*, Zoll. & Mor. Syst. Verzeich., 9; Naud. in Ann. Sc. Nat. Ser. 3, XVIII, 281; Miq. Fl. Ind. Bat. I, pt. 1, 575.

PENANG; *King's Collector* 1457; *Curtis* 100. SINGAPORE; *Ridley* 6218. PERAK; *King's Collector* 10442. DISTRIB.; Java, *Zollinger* 178.

19. MEME CYLON LAEVIGATUM, Blume, Mus. Bot. Lugd. Bat. I, 358. A small tree; young branches very slender, terete, the bark pale. *Leaves* thinly coriaceous, broadly ovate or elliptic, more or less rostrate-acuminate, the base cuneate; main nerves obscure; length 2-2.5 in.; breadth 1-1.75 in., petiole .1-1.5 in., opaque, when dry dull dark-brown, the lower surface slightly paler than the upper. *Cymes* mostly from the nodes of fallen leaves, small, few-flowered, the peduncle very short (.1 in. long), pedicels also very short. *Flowers* small (less than .1 in. long), their buds pointed; *calyx-tube* campanulate, much tapered to the base, the mouth with 4 acute, small teeth. *Fruit* globular, .3 in. in diam., smooth. Miq. Fl. Ind. Bat. I, pt. I, 576; Triana in Linn. Trans. XXVIII, 157; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 561 (excl. VARS.); Kurz, For. Flora. I, 513; Cogn. in DC. Mon. Phan. VII, 1159. *M. Myrilli*, Blume, Mus. Bot., 357; Miq. l.c. 578. *M. pachyderma*, Wall. Cat. 4104. *M. Vosmaerianum*, Scheff. in Flora, 1870, 249.

MALACCA; *Ridley* 1767. SINGAPORE; *Ridley* 1815, 1906, 2026, 4805. PERAK; *Scortechini* 81; *Wray* 2091; *King's Collector* 3768. SELANGORE; *Ridley* 2024. DISTRIB.; Burma, *Helfer* 2328; *Wallich* 4104; Bangka, Java, Borneo.

20. MEME CYLON CINEREUM, King, n. sp. A shrub; young branches rather slender, terete, sulcate on two sides, the bark dark-cinereous when dry. *Leaves* coriaceous, drying very dark cinereous-brown on the upper surface, somewhat paler on the lower, lanceolate or ovate-lanceolate, much acuminate, the base rounded but more often cuneate; main nerves 8-10 pairs, invisible on both surfaces or nearly so, length 2.8-5.5 in.; breadth 1-2.2 in.; petiole .15-3 in. *Peduncles* axillary or from the leafless nodes, not much longer than the petioles, glomerulate, many-flowered; pedicels short, stout, with small acicular bracteoles at the base. *Calyx-tube* cupular, with a rounded base; the mouth expanded, .1 in. wide, undulate and with 4 acute, triangular teeth. *Fruit* globular, the persistent calyx-limb small, .25 in. in diam., smooth.

PERAK; *Scortechini* 394, 2035; *King's Collector* 3143, 10758.

21. MEME CYLON OLEAEFOLIUM, Blume, Mus. Bot. I, 359. A tree, 30-60 feet high; young branches rather slender, terete, smooth, the bark very pale. *Leaves* coriaceous, elliptic-oblong or elliptic, the apex obtusely acuminate, the base much narrowed, when dry of a pale olivaceous-brown colour on both surfaces, the upper the darker; main nerves 8-10 pairs, obscure; length 2.5-4.75 in.; breadth 1-2.25 in.; petioles .15 to .3 in. *Peduncles* 1-3 in one leaf-axil, several times longer than the petiole (elongating in fruit), bearing at the apex

numerous, crowded, 2-3-flowered umbellules with a semi-circular bract at the bases of their short, stout, 4-angled peduncles. *Flowers* with conical buds, less than .1 in. in diam., on slender pedicels longer than themselves, bracteolate at their bases. *Calyx* hemispheric; the mouth truncate, entire. *Fruit* ovoid-elliptic, crowned by the short calyx-limb, .4 long and .25 in. in diam. Miq. Fl. Ind. Bat. I, pt. I, 579 (excl. syn.); Cogn. in DC. Mon. Phan. VII, 1150. *M. Horsfieldii*, Miq. Fl. Ind. Bat. I, pt. I, 572. *M. grande*, Retz, var. *Horsfieldii*, Clarke in Hook. fil. Fl. Br. Ind. II, 558; Cogn. in DC. Mon. Phan. VII, 1153 (excl. syn.) *M. celastrinum*, Kurz from both). *M. lampongum*, Miq. Fl. Ind. Bat. Suppl. 321.

MALACCA; *Maingay* (Kew Distrib.) 811. SINGAPORE; *Ridley* 6414. PERAK; *Scortechini* 2069; *King's Collector* 426, 5187, 4420, 4439, 8571. DISTRIB. Bangka; *Horsfield*; Sumatra; *Forbes* 3213.

This has been treated by Messrs. Clarke and Cogniaux as a variety of *M. grande* of Retz, a species originally described by its author from specimens sent to him by Koenig, who collected in Southern India. Retz's description is very short and, as Mr. Clarke points out, would suit several species. The species of *Memecylon* have not, as a rule, a wide distribution, and very few indeed of them are common to S. India or Ceylon and to the Malay Peninsula. I think it, therefore, in the absence of his type specimen, advisable to consider Retz's name as properly belonging to the Ceylon plant represented by Thwaites's C.P. 3442. Both Messrs. Clarke and Cogniaux treat as belonging to typical *M. grande*, Retz, the Singapore plant issued by Wallich as No. 4472 of his Catalogue under the name *M. laxiflorum*. This plant is now represented only by fruiting specimens which do not, in my opinion agree with any other *Memecylon* in Herb. Kew. The inflorescence in Wallich's specimens is 2.5 in. long, pedunculate, and laxly compound-umbellate. When flowers shall be forthcoming it will probably be found necessary to let the species *M. laxiflorum* stand good.

Thwaites's C.P. which I assume, in the absence of a type specimen, to be equal to the type of *M. grande*, Retz, does not in my opinion resemble the four forms which the two distinguished botanists just mentioned agree in treating as varieties of it, sufficiently closely to warrant such treatment of the latter. I would venture to dispose of them as follows:—

VAR. *Horsfieldii* = *M. oleaeifolium*, Bl. VAR. *khasiana* = *M. celastrinum*, Kurz.

VAR. *pubescens* = *M. pubescens*, King. VAR. *merguica* = *M. merguica*, King.

M. Cogniaux has inadvertently described the fruit of *M. oleaeifolium* as globose, whereas in his original description of it Blume writes "*fructibus ellipsoideis*."

22. MEMECYLON PAUCIFLORUM, Blume, Mus. Bot. I, 356. A small tree; young branches 4-angled, slender, pale-brown. *Leaves* coriaceous, rhomboid or elliptic-rhomboid, drying brown, the lower surface paler, the apex blunt and often retuse, the base acute or subacute; nerves 6 or 7 pairs, invisible or very faint; length 1-1.5 in.; breadth .35-1 in.; petiole under .1 in. *Cymes* umbellate, axillary, on slender peduncles .1-.2 in. long; flowers 7-10, small, on slender pedicels bracteolate at the base

and about .15 in. long. *Calyx-tube* shortly campanulate, or saucer-shaped, with a large, wide, sharply and minutely 4-toothed mouth. *Petals* acuminate. *Stamens* and style much exerted. *Fruit* depressed-globular, smooth, crowned by the toothed calyx, .2 in. in diam. Miq. Fl. Ind. Bat. I, pt. I, 578; Kurz, For. Flora Burma I, 514; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 555; Cogn. in DC. Mon. Phan. VII, 1169. *M. capitellatum*, Spanoghe in Linnaea, XV, 203 (not of Linn.). *M. umbellatum*, Benth. Fl. Austral III, 293 (non Burm.). *M. australe*, Muell. ex Triana in Linn. Trans. XXVIII, 159.

ANDAMAN ISLANDS; very common. DISTRIB. Burma (*Helfer* 2332); Chittagong; Australia; Timor.

The Penang specimens have narrower, less rhomboid leaves than those from the Andamans.

23. MEMECYLON ELEGANS, Kurz in Journ. As. Soc. Beng. 1872, pt. II, 307. A glabrous shrub; young branches slender, boldly 4-angled, sometimes winged, the bark pale. *Leaves* coriaceous, pale yellowish, the upper surface tinged with green when dry, oblong to elliptic, much acuminate, the base very cuneate; main nerves invisible or very indistinct; length 3.5-5.5 in.; breadth 1.4-2 in.; petiole .15-.3. *Flowers* .15 in. long, their pedicels longer, (.2 in.), slender, angled. *Cymes* axillary, several together, pedunculate, simply or trichotomously umbellulate; peduncles .3-.75 in. long, 4-angled. *Calyx-tube* somewhat large for the genus, cup-shaped, narrowed to the base, .1 in. wide at the undulate, obscurely 4-lobed mouth. *Petals* blue, broadly ovate, acuminate. *Fruit* globular, smooth, .5 in. in diam. Kurz, For. Flor. Burma I, 514; C. B. Clarke in Hook. fil. Fl. Br. Ind. II, 554; Cogn. in DC. Mon. Phan. VII, 1138.

ANDAMAN ISLANDS; very common.

VAR. *minor*, King. *Cymes* usually solitary, the pedicel slender, short; fruit only .2 in. in diam. (? ripe); leaves 2-3 in. long.

ANDAMANS; *King's Collectors*.

Smaller than the typical form in all its parts. The flower buds also differ somewhat from those of the typical form.

24. MEMECYLON ACUMINATUM, Smith in Rees Cyclop. XXIII, 4. A tree, 30-50 feet high; young branches slender, terete, the bark brown, smooth. *Leaves* thinly coriaceous, drying pale olivaceous-brown, the surfaces concolourous, ovate to ovate-lanceolate, caudate-acuminate, the base cuneate; main nerves invisible; length 1.5-2.25 in.; breadth .8-1.4 in.; petiole .1-.15 in. *Cymes* solitary or in pairs, axillary, umbellate, on peduncles several times longer than the petioles. *Flowers* 6-8 in a compound umbel; pedicels bracteolate at the base, slender,

twice as long as the flowers. *Calyx-tube* cup-shaped, the fundus broad, slightly constricted below the thick, short, undulate, broadly 4-toothed limb. *Petals* conical in bud. *Fruit* globular, somewhat depressed, smooth, crowned by the narrow calyx-limb, .25 in. in diam. Triana in Trans. Linn. Soc. XXVIII, 158; DC. Prodr. III, 6; Clarke in Hook. fl. Fl. Br. Ind. II, 562; Cogn. in DC. Mon. Phan. VII, 1152 (excl. VAR. *flavescens*).

MALACCA; *Griffith* (Kew Distrib.) 2325; *Maingay* 810; *Derry* 1041; *Ridley* 3297, 3298, 4574. JOHORE; *Ridley* 4656. PERAK; *King's Collector* 3458, 6754.

25. MEMECLON GARCINOIDES, Blume, Mus. Bot. I, 358 (excl. VAR. B). A tree, 20-40 feet high; young branches terete, slender, pale-brown. *Leaves* thinly coriaceous, oblong-ovate or elliptic, abruptly and rather obtusely acuminate, the base cuneate, drying pale-brown tinged with olive, the under surface the palest; main nerves invisible; length 3-5.5 in., breadth 1.2-2 in.; petiole .05-1 in. *Cymes* axillary and in the axils of old leaves, umbellate, many-flowered, on short peduncles (.2 in. long, longer in fruit); pedicels slender, bracteolate at the base, .1-1.5 in. long. Flower-buds acute. *Calyx-tube* small and cup-shaped, the mouth very wide (nearly .1 in.), truncate, but with four minute, acute teeth. *Fruit* globular, smooth, pale when dry, .2 in. in diam. Cogn. in DC. Mon. Phan. VII, 1152.

MALACCA; *Derry* 1240. *Maingay* (Kew Distrib.) 817. PERAK; *Scortechini* 2033; *Wray* 2961, 3203; *King's Collector* 1984, 2938, 7123, 10034; SINGAPORE; *Ridley* 8118. SELANGORE; *Ridley* 7333. DISTRIB. Sumatra, *Blume*, *Forbes* 2970, 3103; Borneo, *Beccari* 536.

26. MEMECLON ANDAMANICUM, King, n. sp. A shrub; young branches slender with faint grooves below the nodes, the bark pale-brown. *Leaves* chartaceous, brown on the upper and greenish-yellow on the lower surface when dry, oblong-lanceolate, gradually and bluntly acuminate, the base cuneate; main nerves 10-12 pairs, interarching near the edge, sub-horizontal; length 2.25-3 in.; breadth .75-1 in.; petiole .25-.3 in. *Peduncles* unequal, .2-.4 in. long, in pairs in the axils of leaves or of fallen leaves, bearing at their apices several 3-5-flowered umbels, bracteolate at the divisions, flower-pedicels as long as the calyx, minutely bracteolate at the base. *Calyx-tube* campanulate, tapered below, the mouth truncate, nearly .2 in. wide. Bud of petals conical. *Fruit* depressed-globular, crowned by the small calyx-limb, yellowish, .2 in. in diam.

ANDAMAN ISLANDS; *King's Collectors*, 357, 452. NICOBAR ISLANDS.

A species with leaves somewhat like those of *M. garcinioides*, Bl., but narrower. In its inflorescence it resembles *M. acuminatum*, Sm., but the peduncles are longer